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**TELEVISION AND PERCEIVED CONTROL: A LONGITUDINAL STUDY OF THE CULTIVATION
OF POWERLESSNESS AMONG MILLENIAL ADOLESCENTS**

A Dissertation Presented

by

FERNANDO RODRIGUEZ

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

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Communication

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OF POWERLESSNESS AMONG MILLENIAL ADOLESCENTS**

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DEDICATION

To my father, Isaias Rodriguez Arizpe, my hero.

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First of all, I would like to thank my advisor, Michael Morgan, for his incredible patience and support throughout all these years. I express my deep gratefulness and admiration for his way of mentoring and teaching, which is the most beautiful way to be a hero. Erica Scharrer and Dan Anderson, also my heroes, were also faithful companions of this project until the end, and their words and feedback on the final version of this project greatly encourage me to go on as communication researcher.

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ABSTRACT

TELEVISION AND PERCEIVED CONTROL: A LONGITUDINAL STUDY OF THE CULTIVATION OF POWERLESSNESS AMONG MILLENIAL ADOLESCENTS

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Cultivation research has observed the long term subtle contribution of television mediated storytelling on the perceptions and beliefs of American viewers for fifty years. Early criticisms of cultivation argued the associations of viewing amount and fear of victimization were spurious and explained away by personality traits such as perceived control or authoritarianism. This project frames perceived control as a cognitive assessment of the personal ability to cope with life challenges. As a cognitive assessment, perceived control is assumed to be in constant revision. From a life-course approach, the symbolic cultural environment (which includes television) is seen as providing context and expectations which shape perceived control evaluations. The contribution of mediated storytelling is expected to have greater impact on times of role transition, for example, during late adolescence in which the individual transitions into adulthood, experiencing challenging new situations and demands.

To test the hypothesis that heavy television viewing contributed negatively to personal evaluations of control during times of transition, a longitudinal study was conducted using data from the National Longitudinal Survey of Youth (NLSY79:Young adults). The data includes 663 adolescents surveyed in 2000 at the age of 14, 15 or 16; and again four years later. Sample includes an oversample of Blacks and Hispanics for comparison purposes. Hierarchical linear regression was employed to test the longitudinal associations. Evidence for cultivation suggest a significant longitudinal contribution of television viewing to perceived control, which supports a resonance pattern.

In this case, resonance refers to a model specification that points to already disempowered and vulnerable social groups (e.g., Minorities, females and those with low educated mothers) reporting lower perceived control when they are heavy viewers. Longitudinal patterns evidence a stronger cultivation effect for females than the cross-sectional analyses, which support the assumption of long term effects from viewing.

Cultivation effects are discussed in terms of worldview distortions. Beyond the distortion of social facts and expectations, which is one of the classic tenets of cultivation research, the current study argues that heavy viewers adopt a worldview with dysfunctional risk evaluations. TV's worldview seems to rely on an extremely small number of sources for control.

PREFACE

One day of 2003, a female student came to my office in the university looking for advice on a personal problem. I was 28 years old, in my second year as college instructor. After a few minutes of conversation, I could see she was not getting the kind of advice she had expected. She looked around my office in silence and expressed a heartfelt wish: “Wouldn’t it be great if one could meet an Angel, a messenger from God, and ask him what should be done on a hard choice like this? You know, like in that TV show, *Touched by an Angel*.” I had not seen it. She went on to describe it: “every week, an Angel from heaven walks among humans, and meets people, and guides them on what they should do to solve their problems.” Then she continued, “I would know that what he told me to do was the right thing to do, because he is an Angel.”

When she mentioned an Angel I thought she was interested in discussing the matter from the spiritual angle, I said, “Well, if you want to know what God would say, the Bible says, ‘honor your forbearers,’ then, if your parents are asking you to stop this situation, maybe that’s what you should do.” She replied, “The Angel would not tell me that... He would tell me to follow my heart.”

Our conversation stuck in my head and from that encounter I wrote some of the questions that became my research agenda since then:

Are we learning from television to feel incapable of solving our most pressing problems?

Is the message from television that problem solving depends on the intervention of heroes, experts, or godly agents? And,

Why is it that we don't feel like the hero of our own story?

In 2004 I came to UMASS-Amherst to work on these ideas with Michael Morgan. He first suggested I looked into learned helplessness. I did. And from there I got familiar with the field of perceived control. I decided to study about perceived control and television from the cultivation perspective. The first analyses with NORC data were very promising. Then I got a cataclysmic family disturbance and got sidetracked in early 2006. Michael said to me, "it seems that you needed to learn helplessness first hand." And I did. For too many years.

The personal struggle to finish this thesis project has led me through a profound reflection of my own personal problem solving practices. I have learned that we interpret our personal histories within patterns, definitions and narratives found in the symbolic environment we inhabit. This environment is populated by the narratives that originate in our own family and our direct community. Beliefs about the meaning of control and well-adapted-ness to life in this world used to be construed within the home and the intimate community. Through the last sixty years we have seen the progressive intromission of the electronic media into all areas of family and individual life, especially, the areas where ritual and symbols take life. We experience a profound redefinition of what control and problem solving is through industrially produced storytelling. This project looks to contribute to our understanding of the impact of electronic media in our personal problem solving beliefs and practices.

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CHAPTER 1

INTRODUCTION

We currently live immersed in a symbolic world with incredible emphasis on personal control. We have learned to punish those who do not seek control and prize (and praise) those who have conquered control. We all share into an ideology of control. We live constantly striving to achieve control in every area of life. The need for control is a natural human trait. Control is a basic condition for personal survival. But modern culture, through its ideological arm (media), has turned it into an ideology of control, and repeats it back at us constantly, exaggerated, and incredibly simplified: *The purpose of life is to achieve total control.*

This dissertation looks to find if habitual television viewing has cognitive consequences over time on viewers' estimations of personal control. Perceived control as a personality construct has been pinned down by psychologists and sociologists as functioning at the core of the human problem solving system (Bandura, 1986; Skinner, 1995). Working with the cultivation perspective, this research is based on the assumption that television viewing provides a stream of images and stories about what is control in this world and how to achieve it. Thus, through storytelling, television cultivates viewers' personal estimations of control in the world.

Cultivation theory (Gerbner & Gross, 1976) is probably the best suited approach within social research to explore patterns of acculturation from mass media. It is simply elegant in its core affirmation: the more time an individual spends in the world of television, the more likely he or she is to agree with the terms of the television

discourse. The cultivation methodology requires that all claims of cultivation are based on cultural indicators derived from systematic content analyses. Though my original intuition was that hero narratives in fiction shows (e.g., *The Lone Ranger*, *Batman*, *Touched by an Angel*, *McGiver*, etc.) were particularly schematic about problem solving and intrinsically emphasized the central role of superior heroes for effective problem solving, soon it became increasingly obvious that the portrayal of the average citizen as powerless was not exclusive of the superhero genre, but it was pervasive in all television content. Levine (1977, 1986), for example, had described the frequent portrayals of helplessness in television news programs. Chesebro (2003), in a summary of 25 years of qualitative research into the narrative structure of problem resolution on prime time had reported that more than half of the fiction shows on prime time emphasized the role of a central character, represented as a hero, an expert, or a leader, in problem solving. Around the time I was starting this project, Dr. Phil dispensed quick fix-it-all psychological advice on a daily basis, and Oprah was already the consciousness (and high priestesses) of the American viewers. Thus, this dissertation is based on the basic assumption that television's representations of powerlessness are not genre exclusive, they are the central cultural narrative of television.

Thus, the central hypothesis of this study is not drawn directly from content analysis of prime time or fiction contents. The cultivation of powerlessness is not an exclusive effect of media violence or news; powerlessness is an intrinsic part of the television viewing experience. It is pervasive in all sorts of television programming.

This idea is not completely new within cultivation. In the pages below I will argue that the cultivation of powerlessness has been an implicit assumption in cultivation theory from the start. Cultivation is a theory of social control through storytelling. The fact that an important portion of the individuals in society are rendered symbolically powerless through the process of cultivation is implied in every cultivation argument about the role of television in the unequal distribution of power in society, either through symbolic victimization, stereotyping, or sheer distortion of social patterns. I will argue that the cultivation of powerlessness is probably the central effect from living with television, and could be construed as a main cultural indicator in its own right. Hence, powerlessness is likely to be found mediating a variety of more specific cultivation effects.

Narratively speaking, the curiosity that fuels this study hints at the risk that habitual television viewing makes consumers more likely to ask, “Who is going to come rescue me now?” when they find themselves at a personal crossroad, in a moment of transition, with high stakes. But our hypotheses cannot go that far, but are limited to a test of the association between overall television viewing and the global estimation of personal control, as observed through the construct of mastery (Pearlin, Menaghan, Lieberman & Mullan, 1981)

Increasingly I have come to understand Gerbner’s emphasis on storytelling as the central premise of cultivation. We live through stories. We are the stories that we tell ourselves and each other. Whoever holds the power to control the stories that are told in a social system will control the minds and aspirations of the people. Thus, this

project looks to answer cultivation's calling to denounce the consequences of living in a world where storytelling is centralized, industrialized, and subject to the needs of the commercial system.

An exaggerated expectation of external intervention by heroes, experts, and divine entities was the first clue towards this project. This human expectation has been acknowledged within the construct of perceived control since its early versions (Rotter, 1966). This reliance on powerful others was labeled "external control" as opposed to the expectation of control from the personal and internal resources of the individual, which was labeled "internal control." External control includes fatalistic expectations of intervention by luck, chance, fate, or powerful others. This distinction between two main sources of control is what gave its name to the locus of control construct. *Locus* means "place" in Latin, and refers to the divergence in attributions of control individuals make. The locus of control concept opened up a fruitful research field that has developed intensely for over fifty years (Reich & Infurna, 2016).

Research with the constructs of perceived control have usually found internal control positively correlated with adaptive behaviors (Lefcourt, 1976). Increased feelings of control are always better, even if they are exaggerated (Skinner, 1995). A discussion of the obsession with control in American culture is beyond the scope of this project. However, deep concern is expressed here about the cognitive consequences of the exaggerated emphasis of television stories on personal control.

Research on television effects has often assumed locus of control as a predictor of television viewing. Since locus of control was considered a remarkably stable

personality trait, it was generally assumed that it was not open to modification from the effects of television fiction. Whenever the correlation between TV and locus of control was found, the causal link was explained as *obviously, externals watch more TV than internals*. This theoretical inertia needed to be addressed, and that is why I devoted a great deal of space to trace the evolution of the perceived control constructs across psychology and sociology, in order to persuade my readers to consider perceived control as a cognitive assessment that is constantly open to new information and, though it is quite stable, it is not immutable. By definition, perceived control is shaped by social acculturation processes. The effects of such acculturation will be particularly evident in times of life transitions, when the old structures of control get shaken and people do not have personal experience solving the new challenges and problems that arise.

This dissertation argues that the contemporary approaches to perceived control, both in psychology and sociology, would greatly benefit from a coupling with cultivation theory. Current models (Abeles, 2003; Pearlin, 2003; Mirowsky & Ross, 2003) acknowledge the role of the cultural environment in the construction of personal control estimations. But they lack the theoretical and methodological strengths to map television's narrative that are found in cultivation theory. The contributions of cultivation theory would greatly clarify the cultural premises and analogies that populate the inner world of television viewers as they encounter and interpret control challenges.

The empirical test of the cultivation of powerlessness involves a longitudinal analysis of a panel survey of American adolescents between 2000 and 2004. The data from the National Longitudinal Survey of Youth is a true gold mine for cultivation research. This project follows a sample of adolescents through a series of panel surveys that involve over 20,000 people across almost forty years. The hypothetical association was tested using hierarchical regression analysis and analysis of variance. Every test of the hypothesized association includes strict demographic controls to rule out spuriousness, and to look for additional masked effects within sub-groups.

Though these data are rather old, the issue of the cultivation of powerlessness does not lack relevance at the present. Those adolescents who were around fifteen years old in 2000 and are popularly identified as *millennials* conform a great part of the current productive force in the United States. Their quest for independence and personal control has puzzled social researchers, teachers, and industry managers for decades. This project looks into how television influences perceptions of control during the transition from adolescents into adults. The findings might offer new light into the origins of current adult behaviors associated with personal control.

The general patterns of findings are highly consistent with other similar findings in cultivation research. This is the first cultivation study on the longitudinal contributions of television to global expectations of control. Television was found to be a very relevant factor in the evaluation of the personal experiences that inform people's sense of control.

I expect these results to encourage cultivation researchers to look for similar long term effects on perceived control within the new media environment. In theory, the new media technologies emphasize freedom of choice, pulverization of niche markets, extreme personalization of media diet, and (ironically) personal control. We should look into the long term effects of cultivation of control expectations by new media, to understand if the current trend towards extreme individualization of storytelling consumption is contributing or hindering viewers' personal estimations of control.

CHAPTER 2

TELEVISION, STORYTELLING, AND POWER

The cultural indicators project (Gerbner, 1969), from which cultivation theory stems, was first introduced in the late 1960s as an innovative approach within the media research field. From the outset, cultivation research has focused on the issue of power (Gerbner, 1973). Gerbner sought to establish an ambitious research program into the three interrelated dimensions of the mass communication process. First, institutional process analysis was meant to conduct empirical research on the power structures, agents, processes, and decisions involved in the organization, production, and distribution of media messages through television. In short, this dimension looked to identify who has the power to censor messages, and how such power was being used for the benefit of the status quo. Second, message system analysis was devised as a systematic and quantitative content analysis of the available messages in the symbolic environment produced by television. The point was to identify how power in society was constructed through the representation of stories. In television stories, the allocation of social power and freedom of action is symbolically established through repetitive patterns of meaning, which follow repetitive rules for production of a very small variety of portrayals of success, well-being, and recognition.

And finally, the third part of the cultural indicators program was cultivation analysis: the empirical observation of the independent contribution of television content to the individual perceptions and collective conceptions of reality. In essence, cultivation research looks for evidence of the way power is constructed and assigned in

society in a vertical manner: from the elites who run the media corporations and their associated commercial enterprises, through their mediated messages and into viewer's actual lives through reception, interpretation, and incorporation of the underlying meaning in messages.

This study aims to test one of the most basic and general cultivation hypotheses: that television, as a social institution, plays a significant role in the unequal distribution of power in American society. More specifically, this study argues that television viewing as a social activity cultivates a sense of powerlessness among its viewers.

The nature of cultivation

Back in the 1970s, when cultivation research began to produce the first violence profiles (Gerbner & Gross, 1976; Gerbner, Gross, Eleey, Jackson-Beeck, Jeffries-Fox, & Signorielli, 1977; Gerbner, Gross, Jackson-Beeck, Jeffries-Fox, & Signorielli, 1976, 1978), it was clear that its understanding of the social impact of television was in contradiction to the dominant current among social researchers based on assumptions of direct, relatively mild, and content-specific, short-term effects associated with attitudinal and behavioral change. In opposition to a research model which emphasized persuasion, reinforcement of behavioral patterns, and varying effects according to individual differences, cultivation offered a systemic conception of the relationship between media and its public. According to this nuanced view, consumers were not learning behaviors straight from likely media role models, but instead were subtly acquiring a distorted conception about social reality that was not necessarily the explicit point of

the message, but was slowly and consistently repeated through recurrent patterns of problems, situations, coping strategies, structures of relationships, and hierarchies of characters, which in general provided a reflection of the ideological mainstream of society.

Within cultivation, viewers were not considered passive receivers of lessons that produce unidirectional *change* of attitudes and behaviors regardless of their social context. Instead, cultivation described a process of long term acculturation in which people incorporated television's messages into their beliefs, attitudes, and expectations of social reality according to their own context. Some of the basic assumptions were that 1) television's representations of reality were systematically distorted due to the requirements and practices of a commercial media system that is primarily looking for ratings and profit and 2) the more time a person spent living in the symbolic world of television, the more likely she was to hold conceptions and expectations about reality that were consistent with television's version of reality.

The basic premise behind studies of media effects back in the 1970s and until now is that media consumption produces changes in the consumers: hence the emphasis on researching the messages and their demonstrable effects. In a classic media effects model, the media are considered the origin of these messages, and the consumers evidence the effects after being exposed to the messages, as the outcome of the process. Since the causal order is considered unidirectional, from the media to viewers, it was obvious to believe that an experimental approach would be the best way

to establish the kind of effects specific messages could produce, controlling for most sources of noise.

According to cultivation, the more profound effects of media messages are shown in the long term, through the accumulation of instances that make a certain behavior or expectation seem natural within a narrative world that has a tremendous coherence and stability. This kind of assumption does not allow for an experimental design, where context and messages can be manipulated and effects observed in isolation. The methodology employed to test for cultivation required a careful analysis of the system of rules and structures of production, the systematic observation of the repetitive images and patterns of portrayals across a variety of standardized messages, and the analysis of message reception through survey questionnaires that measured how that symbolic world was being merged with the expectations about the real world. (See Shanahan & Morgan, 1999, for a detailed exposition of cultivation research methods.)

Though this structure of research stages and the affirmations of demonstrable cultivation effects would again resemble a causality model (Media – Messages – Effects), cultivation analysis does not affirm direct causality, but instead assumes an underlying reciprocal causality between beliefs, attitudes, and the resulting lifestyles which accommodate large amounts of television viewing into daily routines. As Shanahan and Morgan (1999) attempted to frame the causality debate,

The question of ‘which comes first’ is misleading. Cultivation means long-term patterns of stability among systems of cultural images and practices, lifestyles,

and belief structures. People are born into a symbolic environment with television as its mainstream. Children begin viewing several years before they begin reading, and well before they can even talk. Television viewing both shapes and is a stable part of lifestyles and outlooks. (p. 34)

This symbolic environment is not created by the media from scratch, but through mass production and constant repetition of standardized, formulaic, and culturally limited messages, the media cultivate a shared understanding of reality among the public.

Television's narrative takes symbols and meanings that are already present in the cultural mainstream and reproduces them as story plots, character traits, values, risks, preferences, and clear-cut representations of winners and losers, evil and goodness, the accepted and the rejected. Through living in the world of television, viewers adopt an increasingly limited amount of narrative structures and representations to make sense of the real world. The cultivation effect implies the implicit acceptance of stereotyped versions of reality and the values that sustain it.

There is a certain quality of reality to television's images. People can recognize themselves and their society in some of the structures, situations, and outcomes that are presented in most of television's stories. But this reflection is only partial. Television is by no means producing a full-body reflection of society, with all its complexities, singularities, and interrelations. That would be simply impossible. Television's production process requires a selection of situations, risks, lifestyles, and solution strategies that follow certain rules. This is what Gerbner meant by the censoring process

at the institutional level. Through the interrelated though not intentionally concerted system of messages produced by television, viewers get a biased reflection of their own lives and their own society. This television world is internally coherent and has an internal structure that keeps some similarity to reality. The continuous exposure to the television world cultivates beliefs, attitudes, and expectations that are consistent with a distorted representation of society, and which, not by accident, coincides with the operational needs of an increasingly intrusive policing state, and an ever expanding commercial capitalistic system.

The early cultivation reports published in the 1970s addressed a radical shift in the focus of television research, and obviously in the methods of analysis. Instead of focusing on the persuasive capabilities of television to make viewers adopt and reproduce specific patterns of behavior based on or inspired by its explicit content (e.g., specific types of violent actions), cultivation looked into collecting a large sample of representations and behaviors that summarizes the nature of the television world. Such a general and systemic scope for content analysis was unparalleled. The cultural indicators aim was to accumulate such a database of the general patterns of representation that would allow researchers to draw solid conclusions about the implicit ideology of television content, answering the basic research questions: what exists in this fictional world? What is constructed as important? What is right and wrong, good or bad? And what is related to what and how? (Gerbner, 1973).

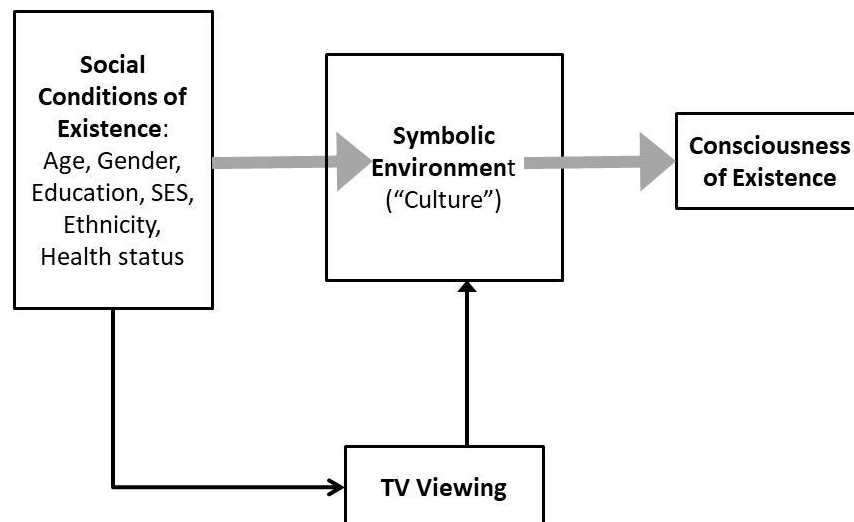
Again, it is important to emphasize how different the cultivation approach was in terms of the effects of television's messages. The goal was not to create straightforward

connections between overt observable mediated behaviors (e.g., a woman punching a Bobo doll on TV) and their acquisition into the repertoire of available behaviors (e.g., a child punching a similar Bobo doll or, for that matter, another available object or being). Instead, the purpose of collecting content indicators through the message system analysis was to be able to observe, at a societal level, “not so much what individuals think or do as what most people think or do something *about* in *common*” (Gerbner, 1973, p. 186; emphasis in original). This emphasis is one of the distinctive traits of cultivation theory: television has become the real melting pot of society. Television as a social institution has centralized most of the storytelling that goes on in the American society. Television has historically brought disparate publics from very different socio-cultural contexts to share into the same stories.

That is the central tenet of cultivation: centralization of the production and distribution of stories in society has to have consequences on the makeup of the shared cultural environment. In the last 100 years we have seen how the media corporations have taken over the societal storytelling practices. First, the popular press and then radio and motion pictures started this industrialization and centralization of the symbolic production. All other media together cannot compare to the depth and pervasiveness of television’s presence. Never before in history had an institution had such power and control over the production and distribution of stories in a society, from birth and until death, and dominated so much of people’s attention and time. Cultivation studies the cultural consequences of living within the influence of the television system.

The overall cultivation effect of television messages describes a subtle cognitive movement towards the acceptance and incorporation of the views, values, priorities, and outlooks of the cultural mainstream. The indicators drawn from content analysis help researchers observe the evolution of the media representations, the values and behavioral patterns that are embedded in the stories, and to draw from these patterns specific hypotheses about the beliefs, attitudes, and expectations that habitual viewers might exhibit. This might sound like “persuasion” in disguise, but it is not.

Figure 1. The symbolic environment mediates between conditions of existence and consciousness of existence



Cultivation’s assumption here is that it is possible to assess and describe the main premises of the dominant culture. Culture is a system of messages, images, and stories that organizes and reproduces social relations. Through culture, people learn to interpret the situations that they encounter in reality. Culture provides meanings and guidelines for enacting and evaluating social and gender roles, social class, productive behaviors, morality, personality, and so on. Gerbner (1990) concludes that “culture,

then, is a system of stories and other artifacts – increasingly mass produced – that mediates between existence and consciousness of existence, and thereby contributes to both” (p. 251).

This diagram (Figure 1) expresses a key assumption, and I will come back to it in a later section. But I want to stress the importance of it here: cultivation research is mainly about understanding the way television has influenced people’s interpretations of their own existence. As cultivation researchers, we are looking into how television shapes the symbolic environment and the cultural references which people use to interpret the situations they encounter in their own life, and how they imagine those situations that are removed from direct experience. From the associations shown in Figure 1, we observe that cultivation deals with basic questions like television’s role in culturally defining what it is like to be a man or a woman: homosexual or heterosexual, Black, White, Asian, or Hispanic, poor, wealthy, or middle class, an entrepreneur or an employee, young, middle-aged, or old. Life in a culture dominated by the presence of television is highly structured. Experiences and their meanings are pre-digested for quick and unproblematic consumption. This is where television and the dimension of power intersect.

Power, that is, social power, is constructed symbolically through television’s representations. Power in television is assigned to specific groups, clearly defined by age, race, gender, appearance, body shape, knowledge, ideology, and practices. Cultivation’s framework allows researchers to describe the logic of television’s role in the distribution of power and to establish research agendas that deal with specific

effects, mechanisms, and consequences. Though often hinted at, but not explicitly mentioned in most studies, cultivation has an underlying ideological position that needs to be expounded so that this study can be properly contextualized.

Cultivation Research on Television and Power

From the beginning, cultivation has been a critical theory. “It is a theory of media’s role in social control,” affirm Shanahan and Morgan (1999). In their book on cultivation theory, they present a clear argument about the way television as a cultural institution has collaborated with social elites for the maintenance of the status quo. Reviewing this argument is relevant here because the main goal of this study is to establish cultivation as a theoretical framework to understand how media contribute importantly to culturally shared perceptions of control. Such association cannot be assumed to be random or simply a side-effect of cheap entertainment. Power in society is distributed through a variety of outlets, along clear demarcations by physical, economic, ethnic, sexual, and educational differences. Though power can have impressive physical manifestations (e.g., police action and the legal system), more often than not the actual enactment of power has a symbolic nature. It is bound by morality, tradition, social practice, and social censorship. In short, power is often enacted through culture and cultural practices.

A theory of mass media as an agent of social control is by default a theory of how media distributes power in society, how media constructs some people as symbolically powerful and other people as symbolically powerless. Cultivation research has been

mapping media's role in social power allocation for over forty years (Shanahan & Morgan, 1999; Shanahan, 2004; Morgan & Shanahan, 2010).

The premises of cultivation follow five propositions (Shanahan & Morgan, 1999, p. 16):

First, in the United States, as in most Western countries, “the institutions of mass communication are owned by social, cultural, and primarily economic elites” (p. 16). Cultivation research has not focused its empirical work on this premise, but the history of the origin and development of most media conglomerates in the United States shows that they have been owned by commercial corporations, funded primarily by advertisers, and influenced by pressure groups from powerful and mainstream religious groups, consumer associations, and ideological institutions. From the start, the media have gone through a shifting relationship with the regulating agencies of government, mainly the FCC. Though the government was initially actively involved in media regulation, since the Reagan years the trend has been toward de-regulation. Increasingly, during the last forty years, de-regulation has been the norm, allowing media corporations to merge and form ever bigger and more heterogeneous media conglomerates that control most of the music, print, cinema, and television productions of the world. Thus, the bigger and more powerful these media institutions become, the more likely their processes, internal policies, rules, and priorities will represent those of the economic elites that own them, and the more likely pressure will be exerted on them to generate profit for their shareholders, regardless of the needs of their consumers.

Second, “social and economic elites codify messages in their media which serve elite aims.” Morgan and Shanahan (1999, p. 16) make it clear that cultivation researchers would not claim that media institutions are part of a deliberate conspiracy to dupe the viewers. But it is logical to assume that “dominant cultural institutions, clearly serving economic elites, are systemically structured so as to most often favor the viewpoints and information that would help those economic elites in the long run” (p. 17).

Third, “the tendency for media messages to conform to elite needs and desires can be revealed through empirical study” (p. 17). This is the basic premise of message system analysis. It affirms that with careful study of the repetitive patterns in content, the underlying lessons of the content can be summarized and observed as a whole.

Fourth, “audience members, whether or not they are seeking to fulfill individual needs, participate in a social process in which they hear and internalize messages of social elites” (p. 17). This is the key proposition for cultivation as a theory of social control. This is not an assumption of persuasive intent by the media. What is suggested here is that “massive attention to television results in a slow, steady and cumulative internalization of aspects of those messages, especially the aspects with ideological import” (p. 17). Currently people devote more time than ever before to entertainment activities. Putnam (2000) has observed that people increasingly go to mass media for entertainment and less frequently to interpersonal or social sources. Thus in the present and for a long time to come, we can expect most people to get their information and entertainment from mass mediated sources and communication technologies, which

are controlled by the elites we mentioned above. This gives elites more control over the boundaries of social discourse, the terms of the debates, and the framing of the positions that benefit their interests.

Fifth, “audience members more ‘committed’ to media will have belief structures more consonant with those desired by social elites” (p. 18). This is the proposition most often tested in cultivation analysis studies and what most communication students would identify as the cultivation hypothesis. Shanahan and Morgan explain it further: “viewership is related to belief structures, under the assumption that more time spent with an elite-dominated media system reflects: 1) a willingness to accept the propositions within those media as useful, and 2) a tendency to accept propositions within those media as, in some sense, factual or credible or normal” (p.18).

For the purpose of this study, the fifth proposition can be paraphrased as suggesting that viewers who spend more time consuming the messages from the elite-dominated media will be more likely to be exposed to socially sanctioned structures, symbols, and meanings that reinforce the socially accepted distribution of power. This cultivation tends to be directed towards social stability, which sometimes prevents change, or slows down radical social interpretations, but at times can also foster a change process that helps the whole system regain its balance. In general, it can be expected for heavy television viewers to develop more conservative assumptions about who has power, who has the right to power, and who is marginalized from power and control. And then when they look at their own lives, their goals, and the abilities and

resources they count on to achieve them, they will also be able to assess if they are part of the powerful ones or part of the powerless ones.

Mean World Syndrome

Cultivation theory took on the topic of television and violence in the context of heightened attention and concern about the outcomes of televised violence. In the late 60s and early 70s, the academic community had been invited and sponsored by the U.S. Congress and other institutions to tackle the question of television violence and social aggression. We have already discussed the media effects tradition from which cultivation departed to offer radically different interpretations of the phenomenon, arguing that “living in a symbolic environment in which violence is so common and prominent may have other consequences, consequences that are simultaneously more subtle yet more far-reaching” (Shanahan & Morgan, 1999, p. 47).

The cultivation understanding of media violence was based on the assumption of television’s main function as an institution for social control. Gerbner and his colleagues (1976, 1978, 1979) argued that television violence should be seen as a demonstration of power and expressing a clear hierarchy of power in society, and through that representation, contributing to social order and stability.

Shanahan and Morgan (1999) summarized Gerbner’s framing of television violence within the cultivation approach to social control:

Cultivation theory casts television violence as a dramatic demonstration of power, as a material reflection of ideology, which communicates much about social norms and relationships, about winners and losers, about the risks of life and the price for transgression of society’s rules. Symbolic violence vividly shows

who can get away with what against whom. It tells us who are the aggressors and who are the victims. (p. 48)

In this sense, cultivation had found consistently that representations of violence on television portray a structure of power in which white males in the prime of life were the most successful aggressors, and younger or older white males, minority males in general, foreigners, and women were more often victims (Gerbner & Gross, 1976; Gerbner et al., 1978, 1979). Patterns of representation in general were also remarkably unbalanced, having three men for every woman. Black and Latino minorities, children, and the elderly were practically absent from the television world (Gerbner et al., 1978).

Television violence thus teaches us a lesson about the general distribution of power and authority in society. Cultivation does not assume that this is what viewers are looking for. People do not set themselves to learn from violence. The question of the functions, uses, or gratifications that viewers get (or think they get) from their viewing is not relevant for cultivation purposes. When large amounts of viewers from different contexts and cultural backgrounds expose themselves to the same stream of images and messages, they become acculturated into a more homogeneous and consistent image of the world.

The main concern since the 1970s until the present day has been about the learning of violent behaviors and aggression from television. Cultivation researchers doubted the logic of an elite dominated media system that would promote socially aggressive conditions that would place its own existence at risk. They argued that if television is making aggressive roles available for learning, it also allows for many more

opportunities for learning how to be a victim, since there are more victims than aggressors on television. Shanahan and Morgan (1999) summarize the position of cultivation: “Apprehension, mistrust, and fear of victimization may be more widespread and general (and subtle) impacts of television violence than occasional acts of imitative aggression” (p. 49).

The emphasis of cultivation research was on a theory of social control which helps social scientists understand how television becomes central in the construction of social consensus and acceptance of a given social structure with specific and limited opportunities for control and power. In the specific context of the 1960s and 1970s, the issue of violence and resulting fear and mistrust became the central object of study for cultivation researchers to grapple with the problem of power. But cultivation was not limited to violence. In the early 1980s the issue of television and social power was going to be addressed through a variety of other topics and associations, like age, gender, political attitudes, and racial stereotypes.

The concept “mean world syndrome” was introduced as a summary construct of the cultivation effects observed from television violence. Though it was measured with a very limited number of items tapping the perceived risk of victimization, the perception of people’s selfishness, and social mistrust, the concept was assumed to provide a reliable glimpse into a wider social phenomenon resulting from a complex array of beliefs, attitudes, and expectations. “Television viewing cultivates a complex of outlooks which includes an exaggerated sense of victimization, gloom, apprehension, insecurity, anxiety and mistrust” (Shanahan & Morgan, 1999, p. 55). The mean world syndrome

construct was based on items from a scale of trust and alienation, called the Faith in People scale (Rosenberg, 1957).

The findings about the mean world syndrome did not go unnoticed among mass communication researchers, and a good deal of criticism followed the publication of Violence Profiles 8 and 9 (Newcomb, 1978; Wober, 1978; Doob & Macdonald, 1979; Hughes, 1980; and Hirsch, 1980, 1981). Shanahan and Morgan (1999) have devoted a full chapter (pp. 59-80) to discuss the specific flaws these critics pointed at, their own methodological shortcomings and limitations, and the way most of them led the cultivation research team around Gerbner to refine some of the methods and assumptions of the theory. The concepts of resonance and mainstreaming arose from those debates, and though heavily criticized after their introduction, extensive posterior research (Gerbner, Gross, Morgan & Signorielli, 1980; 1982) has demonstrated them to be relevant theoretical refinements of an already sound theory of mass media's involvement in social control.

For the purpose of this study, and in general for any attempt at understanding the meaningful contribution of cultivation to mapping the cultural influence of television in society, it is necessary to point at the scope in which the mean world syndrome has its real effect. Television violence might be associated with adoption of beliefs and fears at the individual level, and specific viewers might feel afraid to walk around their neighborhoods at night, and decide to buy locks, guns, and dogs to protect themselves (Gerbner, 1992). But most importantly, at the societal aggregate level, television violence directs attention to the wrong kinds of risks in society (i.e., the risk of

interpersonal violence and murder) and ignores real and pressing risks and imbalances in the social system.

Thus cultivation's emphasis is on the aggregate social level. Gerbner and Gross (1976) concluded that television cultivates an exaggerated sense of danger and mistrust among heavy viewers, and argued that higher levels of social fear can also lead to an increased demand for security from authorities, and the willingness to grant police and law enforcement institutions enhanced powers to provide protection from such fears. This opens the door to repression, abuse of power, and the implementation of increasingly authoritarian policies. This is one very critical way in which television is involved in processes of stabilization, social control, and distribution of power in society.

The cultivation hypothesis is quite simple and straightforward: those people in society who voluntarily expose themselves to a continuous stream of images, stories, and facts from a common source (i.e., television), who spend three or more hours a day with it (making it the most important cultural contact of their lives), must have something in common. If anything, their commonality might be found in beliefs, attitudes, and perceptions of reality that are consistent with the general narrative patterns that are found in television. Though simple and obvious, the cultivation hypothesis has been heavily criticized since the beginning. This study looks to respond to one of those early criticisms.

Criticism of cultivation research

Early criticism of cultivation research and its hallmark finding, the mean world syndrome, addressed mainly issues of methodology, model specification, and spuriousness. Some saw the general measure of television as too incomplete to get a sense of the actual amount of viewing or the kind of contents to which people were being exposed and suggested content-specific measures (Hawkins & Pingree, 1980, 1981, 1982; Potter, 1994) or the use of viewing diaries to capture accurate data about weekly viewing (Wober, 1978, 1982).

Others pointed to the lack of specification and argued that the association between television and fear was spurious, caused mainly by other socioeconomic factors which made people feel more vulnerable and at the same time more likely to watch television for large amounts of time (Wober, 1978; Doob & McDonald, 1979; Hughes, 1980; Hirsch, 1980, 1981). To all of these criticisms, the cultivation research team offered a thorough response in methodological and theoretical terms.

Refinements like the concept of mainstreaming and resonance were introduced to answer those who thought that cultivation had been disproved when the introduction of third variables made the correlations go away. Both refinements help explain patterns of interaction found within sub-groups. Mainstreaming is probably the most common finding in cultivation. Mainstreaming explains observed patterns where people who are very different in terms of specific demographics and lived experiences tend to report more similar outlooks (when they are heavy viewers) in some specific beliefs or attitudes, while such similarity is not confirmed when they are light viewers.

Resonance, on the other hand, is a pattern that shows television viewing associated with increasingly disparate outlooks for heavy viewers. (See Shanahan & Morgan, 1999 for a summary of the debates.)

During the late 1970s and early 1980s, some of the more insidious objections to the mean world syndrome findings came from studies sponsored by the British Independent Broadcasting Authority (Wober 1979, 1980, 1982, 1986, 1988; Wober & Gunter, 1986). Wober and Gunter (1986), summarizing what had been their research program concerning cultivation, argue for the introduction of personality variables as predictors of viewing preferences, arguing that “these characteristics also may determine how people interpret their viewing experiences.” Their assumption was that “in approaching the problem of screen content and of what effects it may have on viewing, the mind of the viewer becomes important in the formation of meanings and hence potential effects of communication” (p. 19).

In an unpublished special report, “Patterns of personality and of televiewing” (Wober, 1980; later synthesized in Wober & Gunter, 1982, and Wober 1986), Wober measured locus of control and fear of crime to study their possible interrelation with patterns of viewing. Wober chose Rotter’s (1966) locus of control construct because it had “some recognition in the literature and had some rational chance of relating to the Gerbner measure of attitude towards social threats” (p. 2). His questionnaire had some methodological issues that seriously endanger the validity of the results. One was that instead of using the standard television viewing measure included in most of the cultivation research original studies, he gave respondents a viewing diary with a list of

all the programs available in British television and asked respondents to check which shows they had seen in the previous week. Another was that he compiled lists of nine types of programs and classified each program in one of the lists, which included action adventure, romance, snooker (a type of British pool), other sports, zany comedy, early news, late news, current affairs, and films/plays. Each subject was given a score for the number of programs seen within each list. Later, they recoded these scores into three indexes: fiction, information, and comedy.

Wober included as dependent variables a set of three items that were adapted from Gerbner's violence studies: "I am afraid to walk alone in my own neighborhood at night," "I worry about having my home burgled and property damaged," and, "We live in a frightening world." He also included three items from Rotter's locus of control scale: "The pace of life is too much for me these days," "People's lives are controlled by accidental happenings," and "I feel that I have little influence over the things that happen to me." The questionnaire included also measures of social satisfaction: "I am perfectly satisfied with my present standard of living" and "Most people want to help you if you are in trouble." Anomie was measured with "You've got to be pretty selfish these days" and "People are just out for what they can get these days." Using factor analysis to confirm associations, Wober assembled indexes for the Gerbner items, the Rotter items, and viewing patterns.

In his findings, Wober shows disappointment for not finding significant correlations between all types of viewing, and asserts,

People who see a lot of a given type of programme tend also to like that type better. That their liking for that type is not just a result of a generalized

appreciation generosity is shown by the much smaller, or zero-order correlation between the number of programmes viewed of one type (say “Fiction”) and appreciation for another type (say “comedy”). (p. 5)

Apparently Wober thought the cultivation assumption about viewing implied that heavy viewers would like everything and would also acknowledge their viewing patterns. But actually the cultivation assumption just stated that heavy viewers watched a lot of everything. “They watch by the hour, not by the program”, was the common assumption of cultivation research in the 1980s, when television was limited to a few channels, and the bulk of viewing involved the main three national networks at the time. The implications of the hypothetical heavy viewer of the 1980s who constantly binge-watched was that he or she would get to know, consume, and be cultivated by a large variety of types of programs. The assumption did not imply that they liked everything they watched. Cultivation assumed heavy viewers would watch “the least objectionable option” available at the time they are free to watch. Of course this has changed by now. And in 2019 we could not attempt to describe the hypothetical diet of heavy viewers, since the options for viewing at any time due to on-demand systems are almost infinite.

Wober found consistently high correlations between the viewing measures and locus of control and also the Gerbner items. His findings show that people who are more external in their locus of control tend to view more fiction and news. People with greater fear and concern for the social environment also tend to view more fiction and news. For both categories, comedy viewing or appreciation have no association. These associations are more congruent with cultivation theory than with a uses and

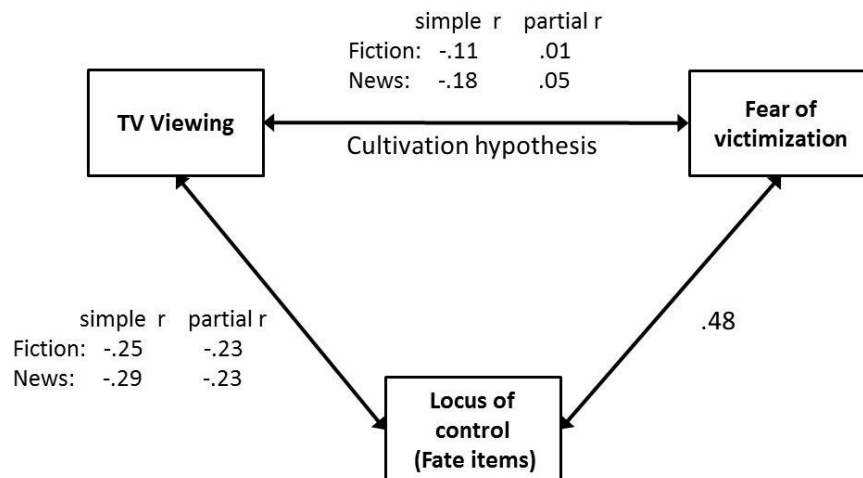
gratifications approach (which Wober claims as his theoretical footing). If people are fearful, then why would they watch more news and fiction (which includes many violent crime shows)? Wouldn't it be logical for fearful viewers to prefer comedy and get relaxed about life, instead of digging for more news and crime images? The patterns of associations are also consistent with cultivation when observed within sub-groups:

There is a marked correlation between the Gerbner and Rotter scales. These scales also relate with sex (women more externally controlled, more fearful), age (older people ditto), and social class (lower class people ditto). (p. 6)

Further, Wober applied first-order partial correlations to check for spuriousness and found very interesting patterns: the association between locus of control and viewing fiction ($r = -.25$) and news ($r = -.29$) held constant when controlling for age, class, and fear of crime (Gerbner's items). Also the Gerbner scale loses its significant correlation with viewing fiction ($r = -.11$) and news ($r = -.18$) when controlling for locus of control and is relatively reduced when controlling for age and social class. This would be expected since the measures are separating between TV genres and not necessarily measuring the amount of viewing but genre preferences. Also, as it was mentioned, age correlates positively with news viewing ($r = .50$) and with fear ($r = -.25$) and external locus of control ($r = -.31$). It would be expected that controlling for age, the association between TV and fear would disappear. But the introduction of controls might mask the strength of the association for the older respondents in the sample, who are heavy viewers of news and perceive themselves to be vulnerable and powerless. The pattern, we could argue, seems to be that of resonance in this case.

Wober concludes that since the association between television viewing patterns and fear of crime disappears when controlling for locus of control, this proves that cultivation's mean world syndrome hypothesis must be spurious (see figure 2 below). His conclusion is based on his assumption that Gerbner's fear items are assessing attitudes, which are subject to modification from social conditions or other stimuli in the environment or the media. On the other hand, locus of control is assumed to be a personality trait, a permanent disposition of individuals, which is "more timelessly concerned with individual helplessness" and thus not related to an isolated stimulus or environmental conditions but to the prevailing social structure as a whole (Wober, 1980, 1982).

**Figure 2. Theoretical model based on Wober (1980)
testing spuriousness of cultivation**



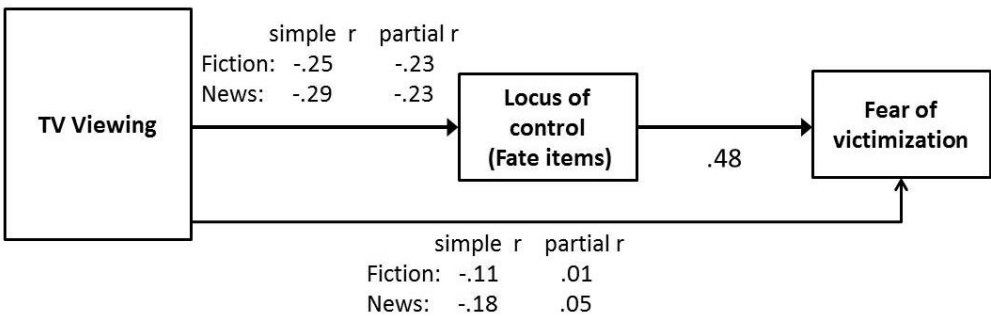
Wober's findings were presented as supporting the following hypothesis:

Rather than being a reaction simply to viewing large amounts of television drama as suggested by Gerbner et al., perceptions of social threat and danger may represent one aspect of a general system of beliefs associated with the

underlying social reinforcement history of the individual. If this hypothesis is correct, then locus of control should correlate significantly with other such measures of social anxiety and mistrust. (Wober, 1982, p. 240)

Wober finds support for his hypothesis by reporting findings that females, working class people, and elders were more fearful and more external in their locus of control. Both locus of control and television viewing correlated significantly with the mean world syndrome items, which apparently showed that “heavy viewers of news tend to be more fearful, more cynical, external and less satisfied with their lot than light viewers” (p. 243).

Figure 3. Alternative model to Wober's findings.



* Levels of statistical significance were not reported in the original report.

However, when interpreting the results of partial correlations, Wober only considers the possibility that locus of control works as a third variable that explains away the correlation between television viewing and fear. His statistical findings will also support a model where locus of control functions as a mediating variable that explains fear as the result of a generalized sense of vulnerability and powerlessness that is informed, among other things, by large amounts of television content (see Figure 3 below).

In this model, the indirect effect of television viewing on fear of victimization could be computed by multiplying the correlation coefficients for the associations between TV viewing and locus of control, and locus of control to fear of crime: $RTV-LOC \times RLOC-Fear = (-.25) \times (.48) = -.12$, which is a typical coefficient of cultivation effects (Shanahan & Morgan, 1999).

However Wober did not consider any alternate interpretation of his data. He went on to conclude that fear is only a symptom of “deep-seated personal dispositions or more general social conceptions, such as locus of control, which underlie both television viewing and the relatively superficial or specific beliefs tapped by the fear of victimization items.” (Wober, 1980, p. 246)

From this finding, Wober and Gunter raise two questions regarding the direction of causality: “Do personal attributes determine viewing patterns? Or, does viewing experience have effects on psychological structure?” (1986, p. 19). Though these research questions warranted a legitimate and methodologically sound cultivation study, Wober (1981) tackled them with a survey study that completely ignored the basic assumptions and methods of cultivation research: his questionnaire measured a “deep-seated personality trait” like authoritarianism (not locus of control), and correlated it with viewing patterns of reports about the Falklands’ war (not with television viewing in general, as was Gerbner’s basic indicator of TV consumption), and then correlated these two so-called independent factors to attitudes about such televised reports (that is, attitudes about the content of the reports instead of attitudes about the conflict being reported). Wober reported finding support for the idea that personality explains viewing

preferences, since “more authoritarian people tended to have viewed fewer informational programs on ITV” (p. 20), and those who watched more evidenced stronger attitudes about the coverage. He concluded it was “unlikely that watching higher levels of ITV’s war coverage had made people less authoritarian. Rather, it was more likely that heavy viewing of ITV was the choice of less authoritarian people” (p. 20). Further, in an additional study of the reception of two apocalyptic nuclear dramas during the mid-1980s, he reported locus of control and authoritarianism being linked to estimated chances of survival of a nuclear attack (Wober & Gunter, 1986).

Though methodologically all these studies are seriously flawed and could be discarded (and apparently they were, since there is no record in the literature of any serious follow-ups, replications, or rebukes), the important objection towards the cultivation approach that remains is based on the assumption that personality traits (like locus of control, authoritarianism, and sensation-seeking) apparently originate in a time previous to any television viewing, and continue to develop and be sustained outside of the dynamic exchange of messages that the television experience represents. That is, personality traits function as predictors of choices in television consumption and moderate the development of attitudes about such contents, but are immune to reinforcement or debilitation by the meanings attributed to those messages. This rationale has been espoused repeatedly as support for the spuriousness of the cultivation hypothesis (Wober & Gunter, 1982, 1986; Gunter & Wober, 1983; Wober, 1988; Potter, 1993; Rubin, 1993; Rubin, Perse, & Taylor, 1988; Haridakis, 2002) and has been presented as support for models based on individual differences and personality

traits as antecedents to television preferences and interpretations. These criticisms are based on the wrongful understanding that cultivation supports a unidirectional causation model, while cultivation actually argues that these variables are dynamically and reciprocally related and in no way represent one-way unidirectional causation.

Criticisms built on false pretenses

In a series of studies attempting to establish the spuriousness of cultivation, Rubin and his colleagues have tried to show the psychological origins of media usage patterns and motivations from an active audience perspective (Katz, Blumler, & Gurevitch, 1974). Conway and Rubin (1991) failed to find support for the contribution of locus of control or authoritarianism to a number of motivations for viewing but did not report any association between amount of viewing and those personality traits. Rubin (1993) used locus of control as a predictor of media use and anxiety, and found that “externals...feel that others aren’t honest with them”, and they “use television in a ritualistic fashion, to fill time, to seek companionship, or to escape from a sense of interpersonal deficiency” (p. 168).

Rubin, Haridakis, Hullman, Sun, Chikombero, and Pornsakulvanich (2003) looked for evidence of the cultivation of fear and anxiety in the aftermath of 9/11. Using a sample of 218 undergraduate students, they tested the correlation between a general measure of television viewing and exposure to specific stories about terrorism with indexes of fear, safety, and faith in others. They failed to confirm cultivation effects for fear, but found near significant correlations with safety and faith in others. Also, the

effect of locus of control was not significantly related with any attitude, though they report that externally oriented women tended to watch television with the purpose of finding information, which caused them to feel reduced levels of safety.

In general, though many studies have collected measures of television viewing and locus of control, they have neglected to report their statistical association, since they consider them both as predictors and not causally linked. In general, the uses and gratifications theory is at odds with cultivation theory in the importance each places on viewer motivations for viewing and the outcomes of the viewing experience. U&G theory tends to distort cultivation's assumption of the undifferentiated and ritualistic viewing experience of heavy viewers, as if the assumption implied that viewers are powerless to select specific preferred contents and have no clear intention for their viewing. Cultivation theory does not go as far as that, but only acknowledges that in the context of the media environment at the end of the twentieth century, the average heavy viewer who reported over three hours a day with television was probably watching a variety of genres, since it was difficult to be selective and still watch over four hours of television daily. The media environment has changed significantly since cultivation assumptions were conceived: video on demand in a variety of platforms is now available, and highly selective genre viewing is now possible. However, this study focuses on cultivation effects from viewing in childhood and early adolescence before 2005, when YouTube was introduced, which marks the real beginning of online video-on-demand services.

Why should we respond to these criticisms now, almost forty years after Wober first introduced locus of control as a third variable to disprove the cultivation model? The last forty years have seen a profound transformation in the way locus of control and, in general, all measures of control are seen by social researchers both in sociology and psychology. The assumptions of locus of control as a “stable and deep-seated personality trait” have been abandoned among the most sophisticated models of coping and competence in favor of a conception of perceived control as a malleable set of beliefs in continuous re-evaluation (Skinner, 1995; Abeles, 1991; Pearlin & Pioli, 2003; Mirowsky & Ross, 2003).

In the next chapter, I will present the transformation of the concept of perceived control from “personality trait” to “coping belief” both within psychology and sociology. Such a theoretical framework allows for cognitive models that include the sense of control as a belief, or set of beliefs, which function as a cognitive abstraction mediating between the social conditions of life and other cognitive and emotional reactions (e.g., fear, anxiety, mistrust, authoritarianism, and depression). This characterization of the construct will provide credibility to theoretical models like the one in Figure 3, where locus of control is a mediating factor between television and fear of victimization.

CHAPTER 3

PERCEIVED CONTROL: EVOLUTION OF A CONSTRUCT

Introduction

Perceived control was first introduced as a concept in social psychology in the late 1950s through a couple of dissertations presented at Ohio State University. Phares (1955) and James (1957) (cited in Lefcourt, 1981) eventually collaborated to develop a 30-item Likert scale (called the James-Phares Locus of Control Scale), which was the basis for the Rotter (1966) locus of control scale. Rotter's scale is a 23-item scale which gives the respondent a forced choice between two statements in each item: one is internal and the other external. All items are added up and a score is assigned to the respondent that places him or her on a continuum with two extremes: internality and externality.

The scale was originally devised to measure generalized expectations of control, but it was not intended to be used as a stand-alone personality measure. Instead, the construct was meant to be used as part of a situational system which explained social learning processes. James and Phares were looking to specify a mathematical model to predict behavior from factors like expectancy of reinforcement, value of the reinforcement, and psychological context. But the construct became very popular, and researchers from many disciplines were throwing it into all sorts of social processes and finding that it had amazing predictive power.

Rotter (1975) attempted to correct some “problems and misconceptions” that had arisen in the application of the construct. First, he clarified that the locus of control construct is one of the factors observed in the social learning process. It generated interest among Rotter and his colleagues because they kept finding systematic individual differences among their subjects in their experiments. They wanted to isolate a variable that would help refine the prediction of how reinforcements change expectancies, and how these expectancies influence behavior. Thus, locus of control was described in this way:

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control. (Rotter, 1966, p. 1)

In the original monograph (1966), Rotter explained that the generalized expectancy of reinforcement tapped by locus of control was a dimension that summarized the history of experiences of the subject with reinforcement. The predictive value of this perception increased as the novelty of the task faced by the subject increased. Since the subject had no experience from which to draw expectations of control, he had to depend on his personal history to predict reinforcement. Further, Rotter clarified that though they labeled the orientations of control as internal or external, the scale was never meant to be used as a typology, separating all people into

only two categories. Rather he assumed “something approximating a normal curve described the populations that we were interested in” (Rotter, 1975, p. 57).

Rotter (1975) basically seemed to be rejecting the application of locus of control as an immutable personality trait, since he acknowledged a continuous learning process (or revision) of the individual’s expectancies of reinforcement. Rotter openly rejected the dichotomy between internal versus external. However, he affirmed that “generalized expectancies are interesting in their own right, since they may be thought of as important personality characteristics” (p. 59). His attempt at clarification of misconceptions seems to have failed, since the dominant paradigm regarding locus of control became exactly that which he criticized: a personality trait. Researchers often divided people into internals and externals, and mostly the application was as an independent variable (either as predictor, moderator, or interacting factor), detached from the learning theory which gave context to it (Rotter, 1975, 1990).

Lefcourt (1976, 1981, 1982) produced a series of compilations of advances in research with the locus of control construct. He emphasized caution not to confuse the instrument with the construct. He understood the locus of control construct as a complex cognitive process that could not be measured with only one instrument but had to be adapted for specific situations and dimensions of control (Lefcourt, 1981). He also contended that locus of control was not a unidimensional concept. The Rotter scale had been originally treated as one-dimensional. Later factor analysis had identified two factors, broadly classified as personal control and social system control (Rotter, 1975; Lefcourt, 1981). Levenson (1973) had introduced a three-subscale version of Rotter’s I-E

scale. The scales included internal, chance, and powerful others. Each scale was assessed and added independently. Lefcourt greeted this effort with enthusiasm, and insisted that in the future, researchers should focus on developing ever more precise measures of perceptions of control for a variety of populations and situations. His first compilation (1981) included a number of new scales for specific dimensions of control (e.g., Levenson's three dimensions, health locus of control, an interactionist approach, and so on) and adaptations for specific groups (e.g., the elderly, children, alcoholics, and mental patients). The call was to keep approaching the construct from different angles and with increased precision.

An obvious question from the start was, Where does locus of control come from? Researchers were trying to understand the antecedents of internal or external orientations. Most of the studies focused on early life, specifically, on family structure, context, and practices, childrearing patterns, closeness, warmth, exercise of authority, and so on. (Crandall & Crandall, 1983; Nowicki & Duke, 1983). Other studies focused on relevant life events. Very little attention was paid to interventions at changing locus of control. Most of the studies were applied to children and adolescents with very positive and encouraging results (Nowicki & Duke, 1983). Only a few were applied to grown-ups. The underlying assumption for this preference was that since "locus of control is a generalized expectancy, the longer one lives, the more resistant one should become to changing one's locus of control" (p. 42). A general assumption about the origin of locus of control crystalized from these early studies: it was mostly inherited from the coping styles of parents, their childrearing practices, early life context, the individual's

personality and sensitivity, and availability for control opportunities (Skinner, 1995). The assumption of early development implied that once subjects reached adult life, control expectancies were very hard to change, and they had become part of the subject's personality.

This assumption of stability is widely observed among the studies included in Lefcourt's second compilation (1983), which focused on applications to social problems. Locus of control is generally employed as a stable personality characteristic that interacts with context or other factors to predict behaviors or responses from subjects. In his closing chapter, "The locus of control as a moderator variable: Stress," Lefcourt (1983) reviewed a number of studies that had used locus of control as a moderating factor in stressful situations. He concluded that "with regard to stress, the locus of control variable has been found to have a substantial impact (in interaction with other variables) on the ways in which stress is experienced" (p. 265). And he went on:

It is obvious that beliefs about one's ability to alter one's circumstances are meaningful. In laboratory and field studies and studies concerned with life events, stress is often found to be moderated by beliefs regarding efficacy and control.

Then Lefcourt (1983) characterized how this moderating effect happens:

If one believes that the aversive circumstances in which one finds oneself are controllable, then one knows to some degree how long and how intense the unpleasantness will be before one acts to alleviate one's duress. Therefore, suffering and pain can be perceived as finite, limited by the fact that one knows one can act to eliminate the source or symptoms of the pain. (p. 265)

From this interpretation we can observe how at the beginning of the 1980s, the dominant paradigm was that locus of control was a stable personality trait that could predict and moderate further attitudes, cognitions, and behaviors, but it was implicitly

assumed it would not change significantly along a person's life. Once someone had been labeled internal, it was expected that in the face of a challenging situation, she would behave consistently with internal orientations: persistence, planning, delaying gratification, enhanced effort, and optimism. Once someone had been labeled external, then he would be helpless, pessimistic, fatalist, and showing little persistence. The moderating role of perceived control on stress was however about to be questioned in a seminal study which introduced the concept of Mastery.

Mastery and the Stress Process

A team of health sociologists (Pearlin, Lieberman, Menaghan, & Mullan, 1981) tested the assumptions that disruptive life events and chronic role-stress had indirect effects on depression (psychological distress) through their effect on the cognitive appraisals of two self-concept measures: self-esteem and mastery. Mastery was defined as "the extent to which people see themselves as being in control of the forces that importantly affect their lives" (p. 340). The implied association with stress was not as a moderating factor, but as a mediating variable:

The protection and enhancement of the self, we submit, are fundamental goals after which people strive. The enduring presence of noxious circumstances, precisely of the kind represented in role strains, apparently functions to strip away the insulation that otherwise protects the self against threats to it (Kaplan, 1970). Persistent role strains can confront people with dogged evidence of their own failures – or lack of success – and with inescapable proof of their inability to alter the unwanted circumstances of their lives. Under these conditions, people become vulnerable to the loss of self-esteem and to the erosion of mastery. In the paradigm that we shall put to empirical test, the diminishment of these treasured elements of self is viewed as the final step in the process leading to stress. (Pearlin et al., 1981, p. 340)

The life-changing events approach, which had been dominating the research into the stress process since the late 60s, based on the Social Readjustment Rating Scale (Holmes & Rahe, 1967, cited in Mirowsky & Ross, 2003), was being seriously questioned at the end of the 1970s. Several studies had found that it was not change per se but the undesirability of the life-changing events which had an impact on stress (Gersten et al., 1974 & Gersten et al., 1977, cited in Pearlin et al., 1981). Pearlin's study on the Stress Process tested the impact of life-changing events and life's chronic stressors on emotional stress, and included a number of other moderators and mediators. The main mediator to emerge from their results was mastery.

Pearlin's approach to measuring perceived control with the Mastery scale was an important improvement on the classic Rotter scale in several areas. First, it was brief. Instead of 23 forced-choice items, it offered only 7 Likert-type items. Second, it focused on the individual's sense of personal control. All items are worded to focus on the respondents' problems and expectations of control, whereas the locus of control scale included several items that measured what can be termed "ideological control" or universal control (Mirowsky & Ross, 1991). Beliefs about what people in general can control are not the same as beliefs about oneself. Actually, if a person has a very low personal sense of control and believes that everybody else is doing better than himself, he could answer very internally to items about ideological control, contaminating results of the scale. Third, the mastery scale refers to a global evaluation of overall control and mastery over one's own life, rather than about control in specific areas of life like school and work, environmental conditions like politics, or specific goals like quitting smoking.

Problematic items in the Rotter scale had dealt with other people's control or control over specific through statements such as "The average citizen can have an influence in government decisions," "Getting people to do the right thing depends on ability; luck has nothing to do with it," "No matter how hard you try, some people just don't like you," and "most students don't realize the extent to which their grades are determined by accidental happenings." Pearlin's mastery scale focuses on the individual's general perception of control over situations that are relevant to his or her life, and it does not include any items pointing to any specific activity or dimension. Mastery therefore assesses a personal and global perception of control.

Pearlin et al. (1981) concluded that the stress process is very complex and involves many factors, events, and cognitions. In their study, they found that though life-disruptive events (e.g., job loss) have a direct effect on stress, the indirect effect of chronic-stressors (e.g., economic strains) through diminished self-concepts (self-esteem and mastery) is actually stronger and possibly signals the influence of social structure on patterns of stress:

...the more tenacious role strains [are] especially inimical to self-esteem and mastery, for hardships that are an enduring testimony to one's lack of success or to the inadequacy of one's efforts to avoid problems would seem to pose the most sustained affront to one's conceptions of self-worth and of being in control over personal destiny... It is the abiding problems to which people can see no end, those that are intrinsically uncongenial with positive self-concept... [mastery] is particularly vulnerable to loss from the assaults of persistent hardships. Such loss, we propose, emerges as an important element in the causal process leading to depression. (Pearlin et al, 1981, p. 345)

This seminal study motivated a wealth of research into the social strains and life-changing events that alter the sense of personal mastery, and into the predictive powers

of mastery. An important evolution of the concept was taking place: mastery was moved from its position as a moderating condition to a mediating variable subject to change, learning, and re-learning. The concept of perceived control regained its emphasis on *perception*, which implied an openness to change.

The concept of mastery and the related scale became very popular among sociologists and social psychologists. The same research habit that Rotter criticized about locus of control happened with research on mastery: it was removed from the sociological theory in which it was originally embedded and used for all sorts of causal associations.

In a later essay, Pearlin (1989) tried to correct this by offering a set of basic guidelines for the sociological study of stress. These recommendations emphasized the re-incorporation of the social structures that produce much of the stress in people's lives: "The structural contexts of people's lives are not extraneous to the stress process but are fundamental to that process. They are the sources of hardship and privilege, threat and security, conflict and harmony" (p. 242).

Pearlin outlined a number of conceptual categories that should be considered when studying the stress process from a sociological point of view. Starting with the structural contexts (e.g., gender, age, income, employment, marriage, race), Pearlin insisted that these measures should not be used only as statistical controls, but that "information about structural contexts and people's links to those contexts should be analyzed at virtually every step of the stress process" (p. 243).

Pearlin's critique was based on the fact that during the 70s and 80s, most of the literature on the stress process had focused on life-changing events, as if life events were the main sources of stress. But he argued that many of the life events included in the inventories are symptoms or surrogate indicators of structural conditions: "They do not represent freestanding or discrete life change. The loss of a home through foreclosure or a jail sentence, for example, is not an event that erupts unexpectedly. More likely, the event is merely an episodic segment of continuing problems" (p. 244). Pearlin further clarifies that sociological attention should be fixed on the stressors and their sources, and not so much on the biological or psychological mechanisms that they produce (1989).

Pearlin (1989) advocates for a return to the fundamental sociological approach to identifying chronic/structural sources of stress and the way they impinge on cognitive and emotional processes (i.e., mastery) that result in stress. His research program identifies several types of chronic stressors: role overload, interpersonal conflicts, role captivity, role restructuring, and ambient strains (p. 245). He argues in favor of methodologies that are able to establish the chronicity of the stressors, instead of only inferring them. Further, the measurement of stressors should be detached from the indicators of stress, to avoid confounding and measuring two indicators of the same phenomenon as if they were independent concepts.

Following this logic of specification, the next step that Pearlin introduces to the stress process is the identification of relevant values. Sociologists often observe that people who are subject to the same stressors do not experience the same emotional

outcomes. Values, Pearlin claims, “regulate the effects of experience by regulating the meaning and the importance of experience” (p. 249). A situation becomes stressful when it is threatening to the self-concept, the personal aspirations, or people’s relationships. The level of threat depends on the values the individual holds, which provide an interpretation of the event.

This refinement of the stress process is key to the present study because it acknowledges the relevance of cultural organization on the personal interpretation of the conditions of life. As Gerbner often suggested, television cultivates mainstream values and common perceptions and interpretations of life. If the symbolic environment influences the stress process, then by definition, the effect has to be mediated through modifications of perceived control (mastery). This association between the symbolic environment and the incorporation of stressors into personal experience was also a foreshadowing of another later refinement of the stress process: the life course approach. In order to contextualize this development, other conceptual contributions have to be understood first. The next section describes two important contributions from the psychological research.

Self-efficacy: domain-specific control

During the late 1970s, another refinement to the understanding of control was introduced: Bandura’s self-efficacy concept (Bandura, 1977; 1997). In opposition to a generalized expectation of control (locus of control or mastery), self-efficacy is a domain-specific expectation of control. It evaluates two dimensions to any task: 1) the

perception that a problem can be solved by the application of a specific skill, and 2) the perception of the personal ability to apply such skill effectively to the solution of the problem.

The introduction of this concept greatly affected the way researchers think about the general sense of control. Similar to locus of control, the assumption about the main source of self-efficacy is personal successful experiences: "Success breeds success," Bandura affirms. A successful application of a strategy or skill in one situation will engender a high expectation of control in a similar situation in the future. The structure of reinforcement becomes a chain of growth in sense of control and mastery of specific skills. This assumption about progressive acquisition of control over very specific dimensions and situations has been extrapolated to the long term, suggesting that a generalized sense of control is the result of accumulated success experiences in specific domains (Skinner, 1995). Thus, the accumulation of instances of self-efficacy produces a more positive general locus of control. Following this logic, we could expect that failures in specific dimensions or tasks would only chip away from the general sense of control.

Two of the contributions that self-efficacy brings to the study of personal control are basic for this study. First, it follows Rotter's (1975) advice about considering the personal sense of control within a social learning theory framework, which Bandura does, with an extremely specified social cognitive theory (Bandura, 1986). Within Bandura's learning theory, self-efficacy is a key element of learning and action: "Unless people believe that they can produce desired effects and forestall undesired ones by their actions, they have little incentive to act" (Bandura, 2002, p. 125). The classic

correlations between expectancies of control and well-adaptive behaviors that had been established with locus of control are found with self-efficacy. Efficacy beliefs influence the way people think about themselves. Self-efficacious people are optimistic, goal-oriented, plan in advance, apply effort and persistence in the face of failure, are resilient, and show less stress and depression in the face of non-contingency. The difference is basically that self-efficacy is limited to predicting expectations, beliefs, behaviors and outcomes for specific domains, while mastery looks for global expectations of control.

The second refinement that Bandura introduces with his social cognitive theory is the vicarious capability (Bandura, 1986, 1997, 2002), which means that people can learn new behaviors, attitudes, beliefs, and even expectations of control from observation of others and the outcomes of their actual behaviors. Bandura has expanded this notion to include mass mediated modeling as an important source of learning (2002). The symbolic environment created by the media offers countless examples that can be learned by viewers. Bandura, in a cultivation-like assertion, acknowledges that “to a large extent, people act on their images of reality. The more people’s images of reality depend on the media’s symbolic environment, the greater is its social impact” (Bandura, 2002, p. 126).

Bandura posits that media are strategically set to alter people’s conceptions of reality due to their “tremendous reach and psychological impact” (p. 126). The mass mediated symbolic environment is continuously taking more and more of people’s time.

Increasingly, more experiences, facts, and knowledge are made available through television or other similar platforms. Bandura concludes:

Because the symbolic environment occupies a major part of people's everyday lives, much of the social construction of reality and shaping of public consciousness occurs through electronic acculturation. At the societal level, the electronic modes of influence are transforming how social systems operate and serving as a major vehicle for sociopolitical change. The study of acculturation in the present electronic age must be broadened to include electronic acculturation. (Bandura, 2002, p. 127)

Bandura's contributions to the study of perceived control allowed researchers to make firm assumptions about the continuous learning regarding control that takes place within the cognitive structure of individuals, and the possibility of alterations and change.

This shift in perspective is evident in the work of Skinner (1995), who incorporates the self-efficacy construct into a novel understanding of perceived control as "a flexible set of interrelated beliefs that are organized around interpretations of prior interactions in specific domains" (p. 4) within a learning theory, where motivation to cope with problems is key to experimentation and learning new strategies. In contrast to locus of control as a stable, enduring, and cross-situational personality trait, perceived control is now considered a set of beliefs constructed by the individual, open to new experiences and the possibility of changing. Skinner's model of the competence system incorporates self-efficacy's distinction of beliefs about self and beliefs about solution strategies (Figure 4, below).

Skinner (1995, 1996) claims that the different concepts of control used by different social disciplines often overlap and address different parts of what she calls the

“competence system” (see Figure 4, above). This system operates to cope with obstacles in every human situation. Depending on the concept that researchers decide to use, different sections of the system are studied.

Figure 4. A Schematic of the Competence System (Skinner, 1995, p.20).

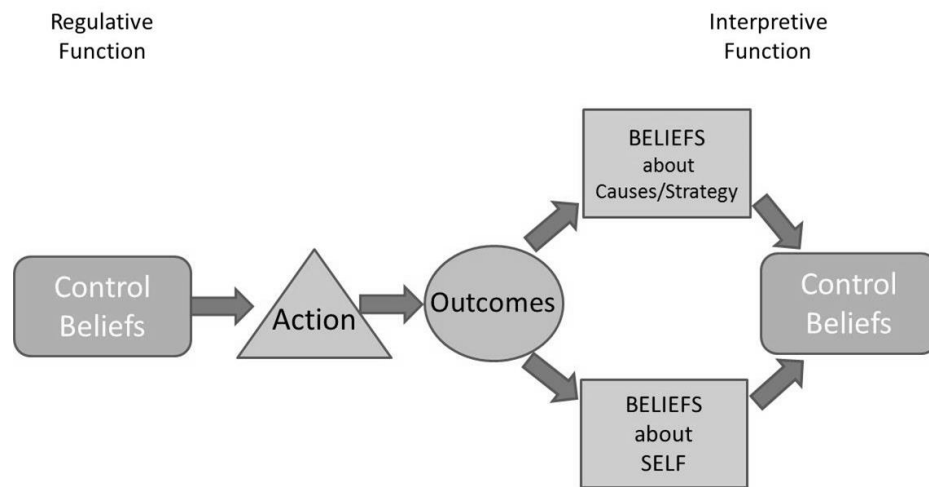
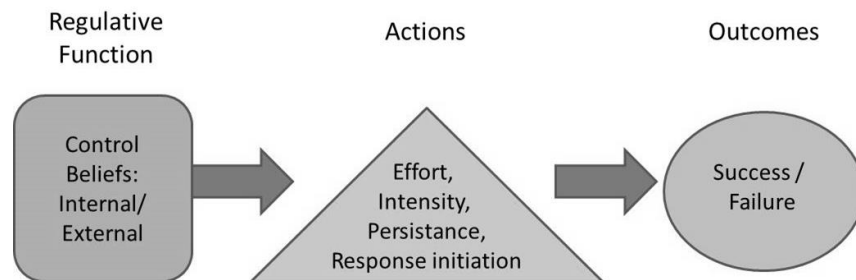


Figure 5. Locus of control in the Competence System. (Skinner, 1995, p.22)



For example, the classic application of locus of control as an indicator of individual differences, and only serving regulatory functions of action, severs the interpretive function of the system, which comprises the learning and adjusting process that takes place after the action is performed. It would look like the model in Figure 5 (above).

The interpretive functions of the competence system allow for reflection on the efficacy of the behavior strategy and the efficacy of the self in applying it (self-efficacy). The assumption from the behavioral approach is that since perceived control is a set of beliefs open to revision, then

control beliefs and actions can create a self-perpetuating cycle... people who believe they have control act in ways that are more likely to produce success experiences, which then confirm their initial high estimates of control... in contrast, people who approach a task doubting whether they have a chance to succeed often act in ways that undermine control experiences, and these failures cement initial low expectations of control. Over time, this pattern of differential interactions will produce relative stability of perceived control. (Skinner, 1995, p. 96)

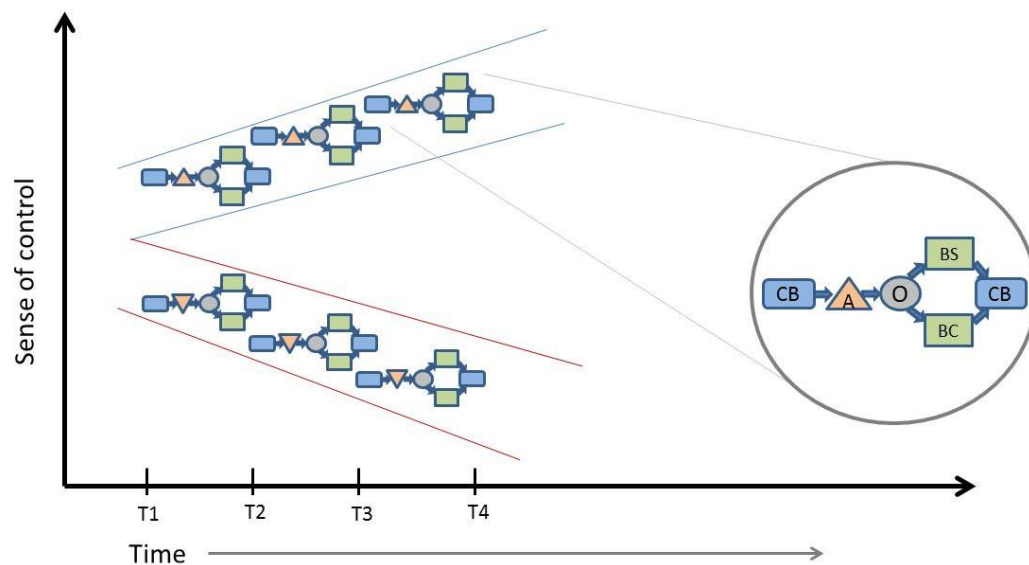
As Figure 6 shows, these trajectories of beliefs can explain long-term individual differences in perceived control, explained by a reinforcing cycle of belief-action-performance. The emphasis of this model is on personal experience as the main source of learning about control.

Skinner's approach is quite useful and opens up many research opportunities into the competence system and its correlates with cognitive and emotional states. But it cuts completely with the social context and the symbolic environment in which people live. Individuals do not live in isolation. Their personal experiences might be a great source of information about control but there is also a great deal of information that comes at them from the social environments in which they are born and live, as Pearlin has stressed (1988), and from their vicarious learning from others and from the mass media, as Bandura has stated (2002).

So far we have traced the evolution of the concept of perceived control from the stable and immutable personality trait that was locus of control in the 1970s and 80s, to

a set of beliefs about the world and the self, open to continuous revision from the personal environment at the end of the 1990s. However, psychological approaches tend to leave the social context of the individual out of their predictive models. The goal is to set the cultivation of powerlessness within a framework that considers the input and interaction with social conditions of life.

Figure 6. How individual differences are magnified across time by the operation of the competence system.



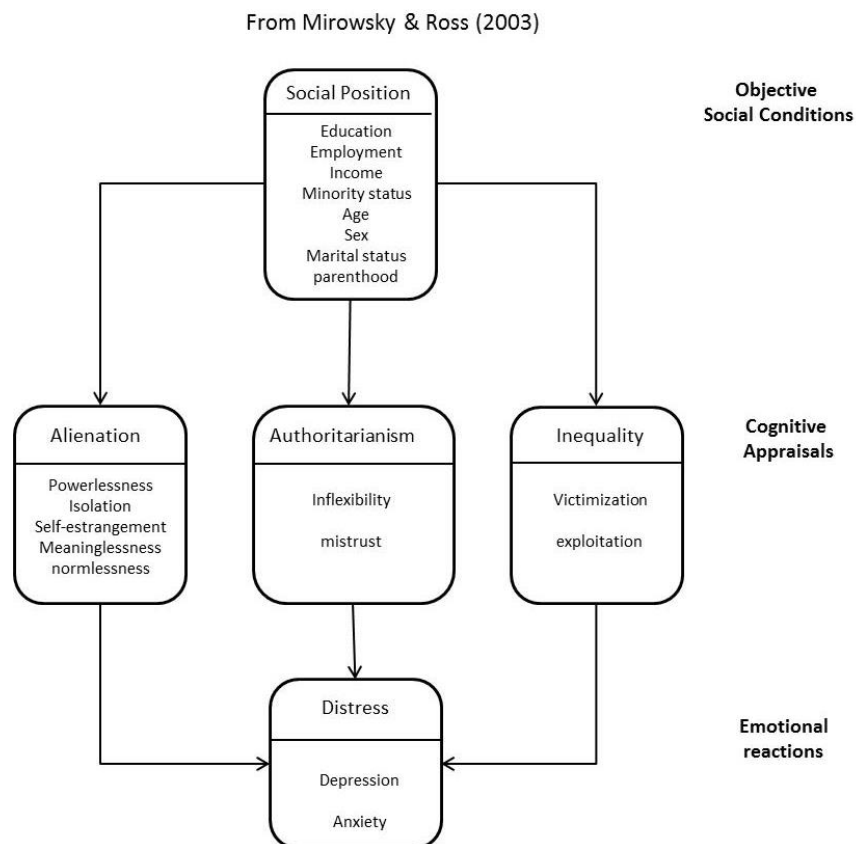
The social causes of psychological distress

Pearlin, introducer of the mastery scale (1981), had called upon sociologists to take a closer look at the consequences of social conditions on stress (1989). In a prolonged and thorough research program, John Mirowsky and Catherine Ross have observed the different factors that contribute to psychological distress from a demographic and sociological approach (1993, 2003). They claim that the most important goal of any social scientist is to work towards understanding and reducing the

social causes of human misery. They look into the effects of gender, age, race, employment, education, marital status, and parenthood on several cognitive indicators that are predictors of stress. Their work has found perceived control as the most important belief associated with distress.

Mirowsky and Ross (2003) have developed an ambitious theoretical framework, adopting Seeman's (1959) conceptualization of alienation, which places powerlessness at the top of the five components of the construct. They follow his lead in assuming a three-part model in which objective social conditions shape cognitions and beliefs, which in turn affect the emotional state of the individual (see Figure 7, below).

Figure 7. Cognitive mediators of social position on psychological distress.



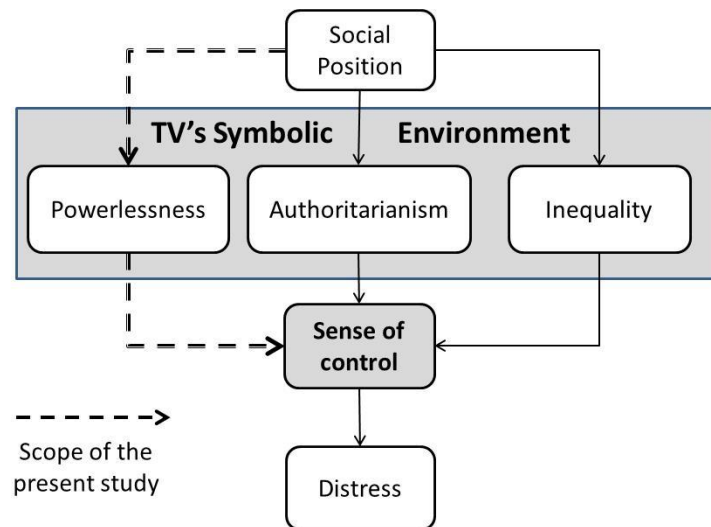
According to their definitions, alienation is “any form of detachment or separation from oneself or from others. Powerlessness is the separation from important outcomes in one’s own life, or an inability to achieve desired ends. Perceived powerlessness (i.e., sense of control) is the cognitive awareness of this reality” (Mirowsky & Ross, 2003, p. 171). In addition to alienation, they included the themes of authoritarianism and inequity in the theoretical model because their links with distress through the mediation of perceived control have been widely established in the literature.

Based on more than twenty years of research into the social causes of distress, Mirowsky and Ross (2003) conclude that the sense of control (a cognitive construct akin to Pearlin’s mastery) is the central link that evidences the cognitive realization of lived experiences of alienation, powerlessness, authoritarianism, and inequity. In short, all social processes correlated to distress are mediated by the construct of perceived control. The model in Figure 8 is a modified version of their overarching model of distress, adapted here to reflect Mirowsky and Ross’s current understanding of the workings of sense of control. It has been adapted here to show what could be a research agenda for cultivation research in the years to come.

This model proposes sense of control (mastery) as a summary construct in continuous revision. The objective conditions of life, observed in patterns of powerlessness, inequity, and authoritarianism are elaborated cognitively within the symbolic environment of culture. In this case, from the cultivation perspective, television is introduced as the indicator of culture and ideology. The goal is to describe

how social conditions of existence interact with the symbolic environment of television to produce an interpretation of reality which is incorporated into a set of expectations about the personal ability to control the situations that are relevant for the person's life.

Figure 8. Sense of control: the critical link to understand the relationship between social conditions and distress.



The scope of the present project is limited to charting the association between social conditions, the symbolic world of television, and a construct of perceived control (see dashed line in the model, figure 8). Cultivation's focus as a critical theory of social control has always made explicit its commitment to denouncing the associations of television to victimization, exploitation, inequality, mistrust, fear, and authoritarianism. The link of all these damaging effects on the social distribution of power has been explicit, but until now, cultivation effects have never been linked to the construct of perceived control. This project introduces perceived control as the summary indicator of

television's acculturation: a precise and elegant antecedent of cognitive, behavioral, and emotional outcomes of living with television.

The theoretical model put forward by Mirowsky and Ross (2003) is based on a semi-structuralist premise in which cognitive expectations and interpretations are "shaped by experience" (p. 178). That is, beliefs are a reflection of the objective conditions of life, which derive from the social structure.

There does not seem to be room for culture, ideology, faith, narrative or any other kind of symbolic negotiation of meanings in Mirowsky and Ross's model. The absence of any discussion about the role of cultural structures or the possibility of people holding beliefs that are inconsistent with their conditions of life is problematic. In their model, conditions of powerlessness will result in perceived powerlessness, but they do not discuss the scenario in which people who live in comfortable, orderly, and advantaged neighborhoods, and who themselves enjoy an advantageous social position (i.e., high SES), develop a sense of powerlessness and a heightened level of social mistrust. Their model cannot account for differences in the interpretation of objective conditions of powerlessness.

Cultivation has consistently found a relationship between television viewing and feelings of victimization for women, the highly educated, and whites (Gerbner, Gross, Morgan, & Signorielli, 1980). Gerbner and his colleagues concluded that "those groups who in general are least likely to hold a television-related attitude are most likely to be influenced toward the 'mainstream' television view" (p. 18). Also, when they analyzed TV viewing and alienation, the cultivation team found that education level was the main

predictor of alienation (as Mirowsky & Ross, 1999, 2003 have found). In the sub-group analysis, they found that TV influence was stronger for those respondents with some college education, who as a group are less likely to express alienation. Those in the high income category, when heavy viewers, were as likely as low-income respondents to report heightened expectations of being victimized.

This is where cultivation research would provide interesting observations to unexpected patterns of powerlessness. In general, cultivation researchers “have seen women as a marginalized social group, given their under-representation and over-victimization in the symbolic world of television” (Shanahan & Morgan, 1999, p. 96). In one of the first longitudinal studies of cultivation using a sample of adolescents, Morgan (1982) found that early TV viewing was predictive of later sexism among girls, though not among boys. This is a clear mainstreaming pattern, where girls, who would otherwise be less prone to adopt sexist beliefs and attitudes, were cultivated by television to accept these views.

Mirowsky and Ross’s structuralist approach sets out to understand the social causes of perceived control and psychological distress. Their scope did not include television or mass media because they are only interested in the factors that structure society. Sociology should have seen by now that television has become a truly relevant social force. The argument that cultivation has been putting forward for over forty years is that there is a relevant share of the variability of social beliefs and expectations that is not totally explained by the classic social structural factors. And it can reasonably be argued that, in a very real sense, the classic delimitations of access to information,

stories, and symbols that used to be a class privilege have been blurred by television. Television has brought people from very different backgrounds and social situations to share into the symbolic mainstream of society. The exposure to threat and neighborhood disorder that used to be an exclusive trait of the inhabitants of the slums is now shared from the penthouse to the ghetto. The continuous drama of living with a life partner and having to deal with economic troubles, children, work uncertainties, and risk of divorce, all of which used to be reserved for grown-ups, is now available through television for all ages to see and learn. The luxury experienced by the wealthy and the few is now shared (at least symbolically) through television among the poor and the middle classes. The sexual stereotyping and victimization, limited professional growth and employment opportunities that women face in the real world are now vicariously experienced by girls from the earliest infancy, to see, to learn, to adopt, and evidence in their own lack of aspiration and low expectations of control as grown-ups.

Television is an actual force for social control and stratification, enacting its power through representations that disempower its viewers through heightened threats, recurrent stereotypes, and alienation. Mirowsky and Ross (2003) have identified three main routes to psychological distress: alienation, authoritarianism, and inequity. All three of these are linked to distress through the mediating effect of sense of control. In several core studies, cultivation researchers have found television viewing associated with alienation (Gerbner et al., 1979; Signorielli, 1990; Morgan, 1983, 1984), mistrust (Gerbner et al., 1978, 1979), authoritarianism (Shanahan, 1995, 1998; Morgan

& Shanahan, 1995; Morgan & Shanahan, 2017), and perceptions of inequity (Kiecolt & Sayles, 1988).

The present study brings together the sociological emphasis on the social causes of powerlessness and distress and cultivation theory's emphasis on the symbolic construction of power and powerlessness. The integration of these two approaches is expected to render a broader understanding of the way viewers integrate television's images and messages into their assessments of personal control.

The life course approach to perceived control

One further development of the concept of control has been introduced by Pearlin and his colleagues (Skaff, Pearlin, & Mullan, 1996; Zarit, Pearlin, & Shaie, 2003). The life course approach is not a completely novel theoretical development, but the notion introduces a relevant consideration to measuring control that brings the concept closer to cultivation theory.

In general, the life course approach is a refinement of the role-stress approach introduced in earlier work on the stress process (Pearlin, 1983; Pearlin & Schooler, 1978; Pearlin, 1989). The assumption is that as people go through different stages in life, they enter into culturally defined and institutionalized roles which pose specific demands and stressors on them. These roles are associated with specific stages of life. It is normal for people to go through these stages. The goals, methods, resources, and outcomes associated with these roles are socially defined, and imprinted in the culture. Stress produced by the demands associated with these social roles affect importantly the self-

concepts of those involved because the roles become part of people's identities, for example, parent, marriage partner, worker, caregiver, and even as people who are sick and dying.

Several patterns of role-strain have been identified: role overload, interpersonal conflicts, role captivity, and role restructuring. The last type, role restructuring, refers to the inevitable transitions and changes in the nature of the relationships within role-sets. As people age or undergo other changes, they face forced modifications in long-established patterns of expectations and interactions. Pearlin (1989) explains:

This phenomenon can be observed in a variety of situations, such as the rebellious adolescent who complains that he is treated as a baby, the apprentice who grows restless with his mentor as he masters his craft, or adult children who must assume increasing responsibility for the care of aged parents. Often the restructuring of entrenched relationships is not easy; it can result in a sense of betrayal, status loss, and the violation of expectations. These kinds of strains may develop insidiously and may persist until people readjust to the new expectations and norms governing the relationships. (Pearlin, 1989, p. 246)

The life course approach is often assumed to be exclusively focused on old age and the stresses involved with physical and emotional deficits, but it refers to difficult role transitions that happen throughout the entire life span. The particular focus of the approach is on the changes that emerge in an orderly or predictable manner, as people traverse multiple life transitions which represent entrance into and exit from specific roles and statuses. What makes role transitions difficult? Basically, not being willing or ready to embrace the transition into a new role or status.

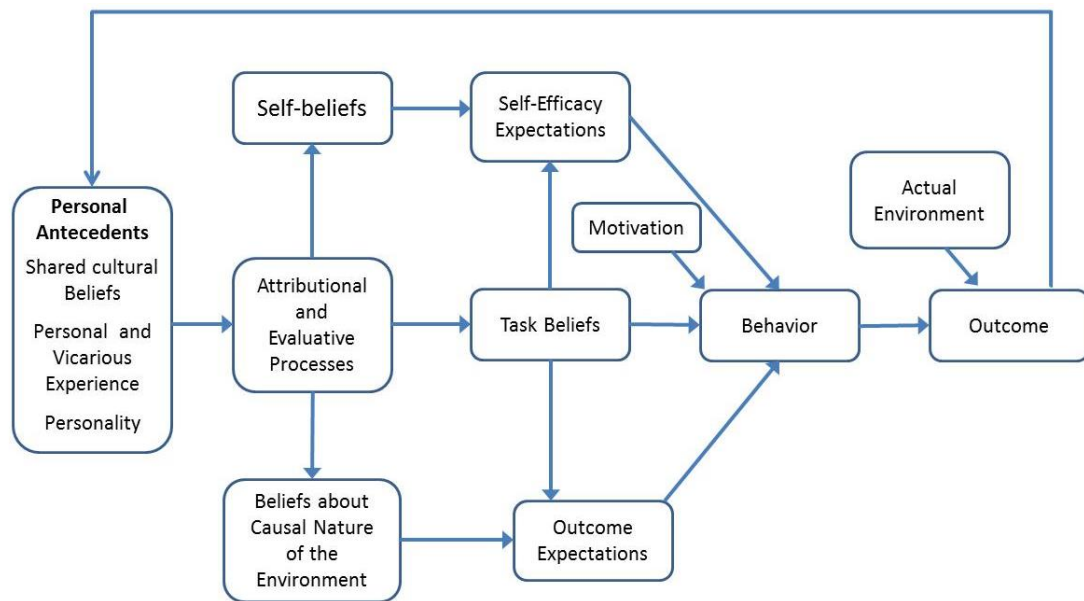
Pearlin (1994, cited in Pearlin & Pioli, 2003) analyzed qualitatively the case of a sample of oldest-old living independently in the community, who reported a surprisingly high level of mastery. In general, the unexpected finding was attributed to a cognitive

re-arrangement of priorities among the subjects. They had dropped the importance they used to attach to social activities and freedom of movement, and instead focused on the control they still had over daily basic necessities like feeding and other logistical needs. He found that “the oldest-old are able to maintain a sense of control by adopting as their standards of judgment the more narrowed areas of life over which they can, in fact exert control” (Pearlin & Pioli, 2003, p. 9).

Cultivation has found that television promotes very clear and specific sets of values and expectations about life. For example, television has been found to devalue aging and the elderly (Gerbner, Gross, Signorielli & Morgan, 1980b) and to promote materialism (Shrum, Lee, Burroughs & Rindfleisch, 2011) and healthy living (at least most of the characters on TV look young, rich, beautiful, healthy, and in the prime of life). There is a great absence of portrayals of alternative lifestyles, the life of those handicapped, the elderly, and in general those facing odd and challenging situations, and when they are present, their negative aspects tend to be exaggerated (Diefenbach & West, 2007). Culture and accumulated personal and familiar experience provide some guidelines about the timing for certain transitions and how to cope with them. But the mainstream culture influenced by television might hinder the preparation people need in order to accept social and personal transitions. If a healthy sense of control requires conscious adaptations to new situations, altering of priorities, and focusing on narrower areas of control where we can be effective, an obvious research question would be, Does television viewing cultivate inappropriate life expectations and standards of living that set up viewers for disappointment at the time of normal life transitions?

This idea is hinted at by Abeles (2003) in a revision of his model of sense of control (Abeles, 1991, in Abeles, 2003). The original model (see Figure 9, below) synthesizes the main processes and interrelations involved in the coping system. The model is similar to Skinner's (1995) model because it introduces several regulatory and interpretive functions around the actual behavior. The model assumes sense of control is composed of multiple beliefs and expectations regarding oneself, the task, the outcomes and the environment. The general sense of control, a construct similar to mastery, is located among personal antecedents, while domain specific self-efficacy beliefs are activated for specific tasks.

Figure 9. A model of sense of control. Abeles (1991).



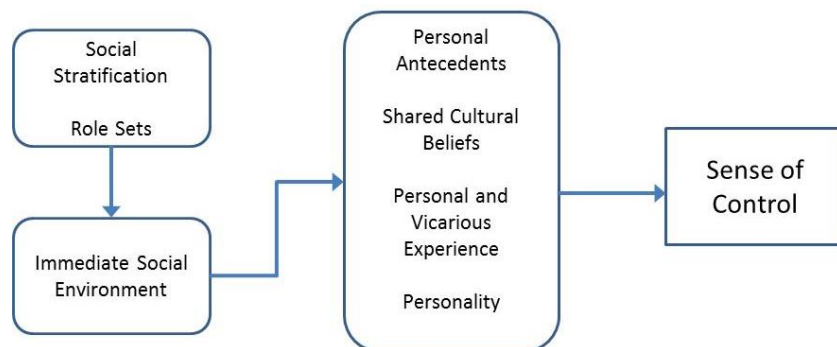
The process involves a feedback loop from outcomes back to the original, hypothesized antecedent beliefs. This loop implies “that accumulating experiences

result in both short- and long-term changes in sense of control as a person undergoes development and aging” (Abeles, 2003, p. 25). These short-term changes refer to self-efficacy beliefs and the long-term changes to the general sense of control.

Abeles acknowledges that the least developed and specified part of the model is that of the antecedents, which includes the shared cultural beliefs, personal and vicarious experience and the personality of the individual. For the purpose of considering the social context, Abeles’s (2003) revision adds two additional boxes to the model, and these refer to the social conditions and the immediate social environment in which life takes place (see Figure 10).

Abeles suggests that researchers interested in the effect of social stratification, role sets, and the immediate social environment on sense of control should pay attention to how “social facts” are translated into “psychological facts”. And he points to, among other things, the cultural belief systems and the information environments as relevant catalyzers of these processes.

Figure 10. Antecedents of sense of control. Abeles (2003).



Abeles explains that “being in an immediate social environment may result in selective exposure to information from mass media as well as other people (e.g., opinion leaders and reference groups) that reinforce beliefs and expectations about oneself and the environment” (p. 28). This revised model acknowledges the influence of the cultural environment and mass mediated sources of information as antecedents of the sense of control process.

Based on this logic, this study proposes that through their shaping of the immediate social environment, cultural outlets (like television) influence the formation and crystallization of the legitimate goals, desires, dreams and expectations involved in the evaluation of personal control of objective conditions of life.

These revisions to the models of perceived control show that researchers have been expanding the understanding of the social and psychological processes at play in the assessment of personal control. The current models agree to include the symbolic cultural environment, which is influenced, at least in part, by television’s construction of reality. Regarding media effects Abeles concludes that “this possible avenue of influence has not been studied very much, if at all, from a life course or aging perspective, and surely not in terms of impact upon sense of control” (p. 28).

Perceived control as a cultural indicator

One more theoretical intuition within the life course approach points in the direction of mass media’s role in the formation and evaluation of sense of control. Linda K. George (2003) criticizes Pearlin and Pioli’s assumption that global sense of control

(Mastery) develops out of personal experiences of control. She concedes that probably domain specific expectations of control (i.e., self-efficacy) are more connected to personal experience, but she affirms, “to my knowledge, there is no firm research evidence demonstrating the process by which individuals develop global control beliefs” (p. 36). And she goes on to offer an alternative explanation for the development of mastery:

I view a global internal sense of control (a.k.a. Mastery) – the joint expectancies that most outcomes are controllable by nature and within our personal ability to control – as a core value of American society and perhaps other western societies as well. Because it is a core value, it is instilled in individuals in the same way as other core values: via a variety of socialization experiences that transmit cultural worldviews to societal members. That is, I suspect that we acquire global control beliefs in much the same way we come to understand that individualism, hard work, and democracy are core societal values. If this scenario is accurate, global control beliefs are learned via widespread socialization experiences rather than by direct personal experience (George, 2003, p. 36).

This understanding of the acquisition of perceived control as a cultural worldview, and mostly distributed through socialization channels, is highly consistent with cultivation theory and with the approach of this study. This study contends that the personal sense of control is rarely abstracted from personal experience alone, but instead personal experience interacts with the cultural frames and expectations in which people are cultivated from infancy and all the way into late life. This assumption offers support for a life course approach to perceived control since it represents beliefs of personal control as contingent on personally meeting the images of control appropriate for specific culturally-defined life stages, roles, and outcomes.

Let us consider this proposition seriously for a moment. George invites us to imagine that the sense of control is not a mental summation of the personal history of

control of the individual, or a rough estimate of actual probabilities of control, or a systematic calculation of capabilities of control in the natural world. Instead, she suggests that when someone is asked to estimate personal control, he or she answers according to culturally defined parameters of control. That is, we could in fact be dealing with a measurement that is not about how well the specific individual provides for his or her own needs and desires, but about how the individual perceives contingency in the social environment and the possibilities of control in the cultural context in which he or she is participating. In sum, the person is probably assessing how well he or she meets the culturally constructed image of someone in control.

The person probably takes a mental short cut and performs a self-comparison within an imagined hierarchy of people in control. That is, people probably invoke a list of people they know and assign themselves a level of control in comparison to how everyone else in such a list is perceived. The outcome of such social comparison process would vary according to *who* is included in the mental hierarchy. If we include our high school class, we will probably feel pretty good about ourselves. But, if we include as referents a bunch of heroes from television reality shows, drama, news, and sports, we will probably rate ourselves lower when thinking about our personal control over life outcomes.

Regardless of which mental mechanism seems more plausible, George's proposition invites us to think of perceived control as a reflection of the socialization processes that people have experienced. That is, global perceived control measures (e.g., Mastery) are probably a reflection of culturally defined values and standards. In

this scenario, we could expect that as the cultural system changes, perceived control would also change, not as a measure of individual perceptions of the real world, but systemically, as a cultural indicator.

This brings us back to Gerbner's notion of cultural indicators (Gerbner, 1973). Cultivation theory has insisted from the start that the main function of television in society is to produce a coherent global narrative that instructs viewers about what is out there in the world, how the world works, and what they should do about it. Television does not have the power to tell people what to *do* about anything, but it has remarkable power to define the limits of public discourse and the categories for social classification. In opposition to the media effects approach, Gerbner insisted that the greatest effect of the mass media on consumers is "coming to terms with the fundamental assumptions and premises they contain, and not necessarily in agreeing or disagreeing with their conclusions or in acting on their specific propositions at any one time" (Gerbner, 1973, p. 187).

In this sense, it would not be extremely controversial to say that Gerbner's meaning of "power distribution" and "social control," when he discusses the societal-level symbolic functions of television, translates for the individual level into an overwhelming narrative emphasis on personal control. Social power is for those who can show the signs of personal control, and life according to television is defined as the continuous pursuit of control. Television's narrative has been characterized mainly about who is in control and who is not (Gerbner et al., 1980). Fiction and news subtly but constantly espouse ideology cultural expectation to bring every aspect of life under

control. Later, during the ads, the public can learn about very specific ways to acquire control of every little aspect of life through consumption. Thus, it is suggested here that the mediated portrayals of personal control can arguably be considered a fundamental cultural indicator.

Shanahan (2004), reviewing thirty years of data on cultural indicators and cultivation findings takes a self-critical turn at cultivation, arguing that TV violence could be questioned as a valid cultural indicator of media's role as a tool for social control in the twenty-first century. Beyond any debate about fear and media violence as cultural indicators, the point here is Shanahan's (2004) emphasis on cultivation's original view of television as serving the purpose of keeping balance in a dynamic society. Fear is probably the most basic tool for social control. Fear of crime victimization is probably not as relevant now as in the 1970s and 1980s, but other fears might be on the rise. Based on Shanahan's suggestions for the revision of cultural indicators, the current study suggests that, in order to chart the new varieties of threats and risks that function as cultural tools for social control, cultivation researchers could use as cultural indicators a sophisticated set of measures to chart the narratives and portrayals of control and powerlessness in television.

To further explain the need for cultural indicators of perceived control we could use as an analogy the hypothetical mechanism of the relationship between TV violence and fear of victimization. The premise is that instances of fictional violence are narratively incorporated into personal experience by feeding general perceptions of societal threats, such that instead of imitating violence, people perceive more violence

and crime around them, and they feel vulnerable and fearful, which makes them supportive of additional protective measures. Following a similar logic, this study argues that the narrative of powerlessness is pervasive in television, cutting across all sorts of content. Not all instances of powerlessness are based on fear or threat. There are many more things to dread in the world than violence or physical harm, as mentioned above, and once those instances of powerlessness accumulate, television viewers are likely to be exposed to an overwhelming amount of information that could be damaging to their expectations of control.

Basic premises of the field study

In sum, the present study will be based on two basic premises drawn from the previous literature review: first, that perceived control is a core belief fundamental to the adaptive functioning of the individual; second, that perceived control is a belief open to relative modification within the life course, continuously open to the influence of the symbolic environment.

Therefore it is clearly pertinent for cultivation research to look into any independent contribution that television viewing, as one of the main sources of socialization and information available in the symbolic environment, might have on the development of individual perceptions of control, beyond or in interaction with the already established effects of social conditions of life and personal experience.

The link between television's symbolic environment and individual perceptions of control might be more relevant than previously thought. In the last half century, American society has seen its cultural institutions increasingly undermined.

Institutionalized religion, voluntary associations, social cohesion, and cultural capital have been steadily in decline (Putnam, 2000), but television viewing has been constantly on the rise, even though many social commentators have been quick to predict its death. Even today, well into 2019, average television viewing is at an all-time high. And there is some evidence suggesting that changes in the cultural environment might have affected perceived control at the societal-level.

Twenge, Zhang, and Im (2004) have observed the influence of the larger social environment on locus of control. Using a cross-temporal meta-analysis, they have observed the changes over time in locus of control as reported by college students from 1960 to 2002. Twenge and her colleagues approach locus of control as an indicator of subtle long-term cultural changes. Their meta-analysis included 97 dissertations which included a sample of college students who answered the I-E locus of control scale (Rotter, 1966), and that reported the average score and standard deviation ($N=18,310$). They correlated the mean scores with the year of data collection, weighting the correlations by the sample size of each study. Their results show that college students have become steadily more external over time. The correlation between mean scores and year shows a strong positive correlation ($r=.70$, $p<.001$). The correlation is still significant if the analyses are limited to samples collected after 1980 ($r=.43$, $p<.01$), or after 1990 ($r=.47$, $p<.03$), which means that scores continued to grow more external in the last two decades of the twentieth century. They report a large size effect of cohort on locus of control. For example, the mean scores from college student samples in the early 1960s were 8.70 in the I-E scale, and the average score in 2002 was 11.96. This

increase in the I-E-scale average means more externality. The average standard deviation was 4.03, which means that the I-E scores have increased .81 standard deviations from 1962 to 2002. To contextualize this, they compared samples using Rotter's 1966 percentile ratings and reported, "The average 2002 student scored more externally than 80% of college students in the early 1960s" (p. 314). They also report that birth cohort explains 14% of the variance in I-E scores.

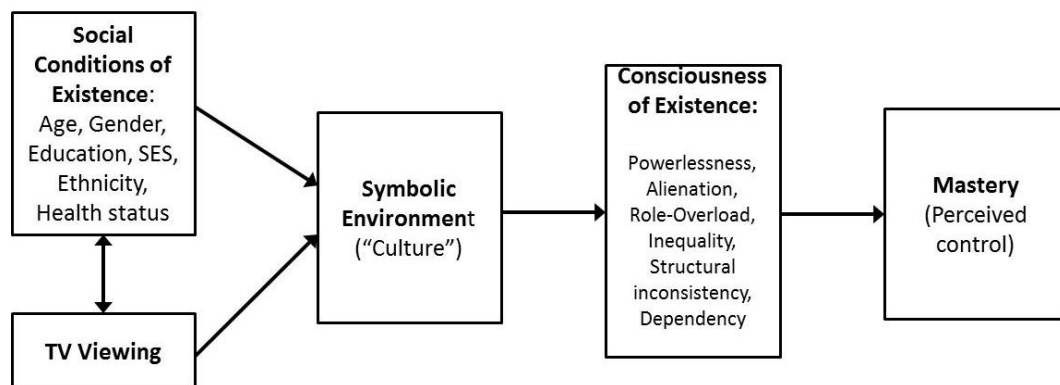
Twenge and her colleagues (2004) discuss the findings of increased externality among college students as the result of trends that show greater cynicism, distrust, and alienation among recent generations. There might be many social and cultural events and trends that have contributed to this pattern. But from a cultivation perspective, we could argue that television became a dominant medium in the 1960s, and its influence grew steadily during the last 40 years of the twentieth century. We cannot establish direct causality, and probably there are other social explanations for the observed patterns, but the association between the continuous presence of television and the increase in externality should not be ignored as we discuss the hypotheses of this study.

In conclusion, the current theoretical understandings of perceived control will benefit greatly from the introduction of cultivation theory in order to tap the contribution of the cultural sources of values and expectations that inform the evaluation of perceived control in different life course stages.

Combining the theoretical frameworks of Gerbner (1990), Mirowsky and Ross (2003), Pearlin (1988, 2003), Abeles (2003), and George (2003), it could be argued that the social conditions of existence, indicated by social position, interact with television's

narratives to generate a contextual symbolic environment in which the central question of personal control across the life course finds well-defined guidelines, standards, and models. Mastery is shown here as a summary indicator of global perceived control. That is, mastery is understood as a reflection of the cognitive processing of social conditions within the context of the shared symbolic environment. A theoretical model of this assumption is shown below (Figure 11).

Figure 11. Adaptation of Gerbner's general model of cultivation to complement the life course approach to perceived control.



The cultivation of powerlessness

Cultivation theory, as a theory of social control, has focused on the issue of power for over forty years. Working on media effects from a critical approach, cultivation researchers have sought to integrate the analysis of media institutions and their programming practices, the observable structure and characteristics of televised contents, and the resulting perceptions of the viewing experience, to describe with academic rigor the social function of television as the symbolic arm of the economic, political, and cultural elites.

Cultivation research findings have identified several routes that contribute to the function of social control. The most notorious was the association between television and the mean world syndrome, which described how heavy viewers tended to exaggerate their perceptions of crime risks and were more distrustful of and alienated from others. In spite of frequent criticisms, cultivation has become a mainstream theory among communication researchers. However, many of the studies often misrepresent the fundamental assumptions, misapply the basic methodologies for content analysis, mishandle the collection of perceptions and attitudes, and often confuse or ignore the mainstreaming proposition.

Recent applications of cultivation theory tend to ignore its central focus on power and television's role in the maintenance and stability of social structures and ideology (Morgan & Shanahan, 2010). The focus on genre-specific effects and program-specific effects have often blurred the central theme of cultivation, and produced confusing or contradictory results. Morgan and Shanahan (2010) in their literature review question if such efforts should still be called cultivation. Nonetheless, many of the studies that somewhat distort cultivation assumptions and methods still contribute interesting and useful understandings of the way a relatively high level of contact with the medium distorts perceptions of reality or helps prevent change of beliefs or attitudes that are common in other more progressive areas of society.

The present study seeks to be consistent with the original cultivation premises, emphasizing the role of television in social control and the unequal distribution of symbolic power in society.

The concept of perceived control, which was wielded as the third variable that allegedly showed cultivation's mean world syndrome to be a spurious effect almost forty years ago (Wober, 1980), has come full-circle. Researchers currently consider the concept of perceived control to be malleable, and relatively open to modification throughout the life course. In current models of perceived control reviewed here, researchers have included hypothetical links to the cultural and symbolic environment, calling for further research to clarify the role of these social forces on the development and life-course variations of the construct (Abeles, 2003; George, 2003).

This study proposes that both theoretical paradigms would greatly benefit from a joint model which answers the question, What is the role of television viewing in the development and modification of personal perceptions of control along the life course?

Specifically, this project calls on cultivation researchers to introduce perceived control as a new cultural indicator. This emphasis will seek to synthesize the distortions in portrayals, stereotypes, and narratives, linking viewers' habitual consumption of storytelling to one simple and powerful construct that both psychologists and sociologists agree is a fundamental feature of the individual's cognitions, associated with the best and the worst outcomes of life, and the main antecedent of distress, depression, and human misery.

The temptation to speculate on the specific content patterns or cognitive mechanisms that explain television's cultivation of powerlessness is almost irresistible., The present study however limits its scope to testing the statistical association between television viewing and perceived control among American adolescents. Though a

content analysis was not performed to offer a supporting rationale, linking television portrayals to the beliefs that will be tested empirically, the cultivation of powerlessness claim is based on many findings by cultivation researchers that link content patterns and the cultivation of dis-empowering and stereotypical beliefs and attitudes on such things as gender, sexuality, race, affluence, violence, victimization, casting, quality of life, education aspirations, aging, professional aspirations, and even beauty standards. All these aspects, as Mirowsky and Ross's model suggests, contribute to the construction of the sense of control among individuals. Thus this study suggests that the cultivation of powerlessness could be seen as the most general (in scope) cultivation effect.

From the beginning, cultivation has been criticized for not providing enough causal evidence because most of the studies are cross-sectional. Cultivation critics (Potter, 1993; Rossmann & Brosius, 2004) have insisted that cultivation findings should meet four requisites to establish causality: first, the association must be statistically significant; second, the association must be in the direction predicted from the television content; third, the cause must precede the effect chronologically; and fourth, spuriousness from third variables must be ruled out.

The empirical design of the current study is set to meet all of those criteria. The cultivation analysis will be performed on data from a panel sample with surveys collected in two points in time from the same subjects. This study will look for longitudinal confirmation of cultivation patterns using a sample of adolescents. The sample offers several methodological strengths: first, the time series is four years apart, which in case of finding confirmation for longitudinal association, would make it more

remarkable; second, the data were collected with rigorous standardized methods and based on personal interviews; third, it comes from a national sample of young adults, which eliminates problems of homogenization due to regional or socioeconomic similarity; and fourth, the data were collected from adolescents, which allows us to test the impact of viewing during a time of life in which perceived control is generally expected to develop positively, that is, during this age frame, measures of perceived control tend to have a marked growth curve. Adolescence is the time of life in which people's control beliefs are more susceptible to influences from the social environment and personal experience.

Hypotheses of the study

Two hypotheses summarize the theoretical debate put forward in this study:

H1: The cultivation of powerlessness

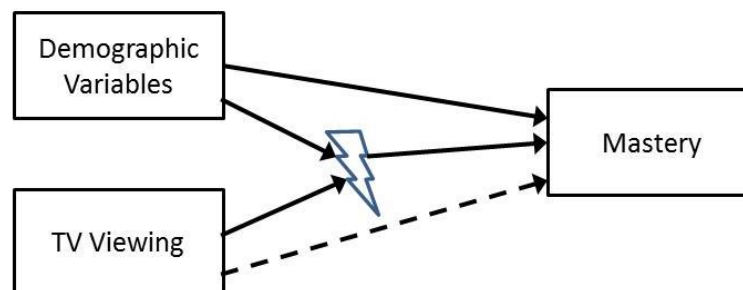
Television viewing has an independent contribution on perceived control that is statistically significant after controlling for demographic factors (Figure 12, below).

The hypothesized association will be tested both on the longitudinal and the cross-sectional level. The cross-sectional analysis employs both waves independently. Partial support for this hypothesis in the cross-sectional level would come from statistically significant negative associations between television viewing and mastery. The longitudinal analysis will test if there is a statistically significant negative association between television viewing in 2000 and mastery in 2004. Several demographic factors, including mastery in 2000, will be included as statistical controls. Additionally, the

association will be looked at within groups, in order to describe mainstreaming or resonance patterns.

The purpose of this hypothesis is to establish if there is any evidence to support the claim that television viewing cultivates beliefs and attitudes of powerlessness among adolescents. Also, sub-group analysis will show whether these effects interact with other social factors to produce patterns of mainstreaming or resonance.

Figure 12. H1: Television Viewing and Mastery, and the interaction with demographic variables.



H2: Reverse Causality

This hypothesis describes a pattern of association consistent with the early criticisms of cultivation theory. Previous personal mastery has an independent contribution on amount of television viewing overtime which is statistically significant after controlling for demographic controls (Figure 13, below).

This would be the closest test of Wober's (1980) criticism to cultivation. If previous mastery is found to be predicting television viewing in the longitudinal analysis (H2), and earlier television does not predict later mastery (H1), the claim that cultivation theory is spurious, made by Wober (1980), will have some serious support.

Wober's model found locus of control as predictor of both television viewing and fear of victimization, so that any association between television viewing and fear was partialled out by their mutual dependence on locus of control.

The rationale for why the cultivation hypothesis was a spurious one was something like this: externals, who are characterized by fatalistic thoughts and doubtful of self-reliance, tend to stay home instead of going out into the risky world, and since they are not exactly adventurous and are home most of their free time, they watch more television, which they judge is a safe thing to do. They are more afraid of societal risks than the average citizen, not because they learn about threats on television's vivid and violent world but because their personality determines a fearful and wary outlook. This personality is not innate, of course, but has been shaped, framed, and furnished by environmental influences and personal experiences with the symbolic world during the early years of life, from infancy until the late teens. Thus this deep automated framework to respond to reality (a.k.a. personality) is responsible for any feelings of mistrust and fear of victimization evidenced by external individuals, and is also responsible for a predisposition to stay away from the dangerous outside world and stay home watching television. This logic is summarized in figure 13 below.

If only the reverse causality hypothesis (H2) is supported, a mainly structural understanding of the role of culture would be supported. Social structure would then be the main source of perceived control, and television viewing just a symptom of such structure, without any feedback loop into consciousness of existence through its effect on the cultural system. If however both hypotheses are supported, that would grant

more validity to the cultivation model, not less, supporting a reciprocal association model.

Figure 13. H2. Mastery causes TV Viewing.



Reciprocal association

If both hypotheses are supported, a reciprocal relationship would be supported. Cultivation considers television viewing both as cause and effect of the cultural environment. Television feeds from the cultural environment and nourishes its assumptions and structures with relatable examples and myth. Television viewing, just as ancient and modern forms of storytelling consumption, is not a random activity but a ritualistic activity. It fits into people's agendas, routines and habits.

Heavy viewing can be seen as the result of a syndrome associated with restricted access to other alternatives of information, entertainment, and storytelling. Once someone has become a heavy viewer, it is difficult to change that. Television becomes part of the daily activities and gives meaning to social interactions, personal desires, and periodic family rituals. An example of this reciprocal relationship is the correlation between being overweight and television viewing. Do people watch more because they are overweight? Or are they overweight because they watch more TV? Can these two conditions be actually separated?

Heavy viewing requires long hours sitting idle. People like to eat while they watch TV. And if TV ads work, they will be feeding mainly on candy and junk food. Eventually, people get more overweight, they can move even less, they are more time home, sitting, and they will watch more television. The same structure might be happening with television and perceived control. The more people watch, mastery becomes lower; people with an external outlook will not attempt new activities, they will not look for alternative and challenging storytelling, but instead will stay home, watching more television. The system eventually finds stability. And that is why we cultivation researchers call television a tool for social control.

This study rests on the assumption that television's narratives contribute to a social discourse that emphasizes personal striving for control. This narrative offers an increasingly limited number of sanctioned routes for achieving control. From a cultivation perspective, this study assumes that just by spending more time in a symbolic world with so much emphasis on power and control, people are bound to question their own possibilities of control, especially if they are part of sub-groups that are portrayed as lacking control in the world of television.

Therefore, the main hypothesis of this study, the cultivation of powerlessness, would be greatly supported by the acceptance of both H1 and H2. Across the life course, there are several life transitions. In this study, we are looking into the transition from adolescence to adulthood. Later transitions—into the workforce, into marriage, parenthood, personal losses, aging, and retirement—will also be interesting subjects for research into the associations of television and expectations of control.

CHAPTER 4

RESEARCH METHODOLOGY

Introduction

This section provides an overview of the database employed for analysis. It deals with how the data were collected, reliability issues, the association between variables and controls, and how the data were cleaned and modified to render the variables and indexes for statistical analysis of the hypotheses.

The National Longitudinal Survey of Youth

The National Longitudinal Survey of Youth 1979 (NLSY79) is a program funded by the Bureau of Labor Statistics of the Department of Labor and the Department of Defense to obtain longitudinal information from representative samples of men and women in the U.S. In 1979, a sample of 12,686 people who were then between 14 and 22 years of age was first surveyed and continued to be interviewed every year. This original sample was selected out of three sampling and screening processes that looked at three sources of respondents: 1) a cross-sectional sample (n = 6,111) designed to represent the noninstitutionalized civilian segment of young people living in the United States in 1979 and born between January 1, 1957, and December 31, 1964; 2) a set of supplemental samples (n = 5,295) designed to oversample civilian Hispanic or Latino, black, and economically disadvantaged, nonblack/non-Hispanic youths born in the same period; 3) a military sample (n = 1,280) designed to represent the population born

during the same period and serving in the military as of September 30, 1978. The inclusion of the military sample allows comparative civilian-military analyses.

By 1986, a new set of additional questionnaires started to be collected every year to trace the development of the children born to the women in the original 1979 sample. In addition to the information provided by the mothers, school records and other self-report questionnaires were collected from children and early adolescents.

By 1994, substantial numbers of children of NLSY79 mothers had reached at least mid-adolescence. The NLS decided to separate the older children (15 and older by the end of the survey year) into a third NLSY79 component: Young Adults. The Children of the NLSY79 survey is sponsored and directed by the U.S. Bureau of Labor Statistics and the National Institute for Child Health and Human Development. The survey is managed by the Center for Human Resource Research at The Ohio State University and interviews are conducted by the National Opinion Research Center at the University of Chicago. Interviews employed a computer assisted personal interview (CAPI) survey. The questionnaire focused on the transition to adulthood, with more detailed questions on education, employment, training, health, family experiences, attitudes, interactions with other family members, substance use, sexual activity, non-normative activities, computer use, health problems, and pro-social behavior. Many items are similar to the ones asked of their mothers over the years, particularly when their mothers had been at comparable life cycle points. Since 2000, all surveys were computerized and administered through CAPI. The most recent data available were collected in 2014. The

NLSY represents data from 10,493 children of the more than 6,000 women from the original 1979 sample.

Not all the children of the women from the 1979 sample are included in the Young Adult survey. Children who are not fielded to be included in the survey include those who have not lived at least part-time with their mothers, the children of no-longer interviewed mothers from the military and poor white oversamples, and children for whom there are no child interviews or not enough school records and assessments as children. In general, the Young Adults survey includes older children who have been assessed or interviewed as children, or who are currently or were typically living with their mother either full or part time during at least part of their childhood. Some of the eligible young adults are not included because their mothers refused to allow the interview, or because they refused or were unlocatable. The 2000-2004 samples included Young Adults aged 15 and older who met the selection criteria.

The 2000 wave included a total of 3,025 adolescents and young adults aged 14 and older, out of the total sample of 6,109 children reported by the 3,464 mothers interviewed in 1994. Due to NLS budgetary reasons, the 2000 sample did not include approximately 40% of black and Hispanic oversample cases between 15 and 20 years old. The sample was further divided into equivalent sub-samples to answer different questionnaires. Only 1,291 children were asked to complete the seven-item Pearlin Mastery scale and asked about their television viewing. Out of these, only 1,107 were interviewed again for the 2004 wave.

Within the useful sample for the 2000-2004 panel, the data shows two clearly different sub-samples: those who were adolescents at the 2000 interview, aged between 14-16 (N=663) and the young adults, aged 17-29 (N=627). The two sub-samples differ importantly in socioeconomic aspects and cannot be lumped together for analysis. The young adults were typically born to very young mothers of black and Hispanic origin, mostly from low socioeconomic levels. 17% of these were dropouts, and 20% were or had been married, whereas none of the adolescent sub-sample had been married or were dropouts by 2000. Mastery levels for the young adults sub-sample show a very different pattern from the adolescent sub-sample, probably due to their disadvantaged context. In order to avoid the interpretation problems that would imply using the whole sample, or the task of comparing the two sub-samples, which is beyond the scope of this project, the sub-sample of young adults was eliminated from this study, and only the adolescent sub-sample will be used.

The analyses reported from here on are performed only on the sub-sample of adolescents, aged 14 to 16 at the time of the 2000 interview (N=663), born to women who were between 19 and 28 at the time of their birth. Average age of the sample is 14.9 (SD=.70). The age distribution shows that 200 respondents were 14 years old (30%), 329 were 15 (50%) and 134 were 16 (20%). Females represented 51%; whites 49%, blacks 28%, and Hispanics 23%. The oversample of blacks and Hispanics, and the lack of identified Asians in the sample makes it complicated to generalize from the overall sample. Thus, for most of the analyses, the sub-groups will be compared by race.

Independent variable: Television viewing

Television viewing was assessed with only one closed-ended item that asked for a weekly estimate of consumption: “About how many hours do you watch TV in a typical week?”, assessed with a 9-point scale where each point represented a range of 5 hours. The distribution of responses is shown in Table 1 below.

Table 1. Television viewing patterns by wave and viewing classification.

Interval of weekly viewing	2000 Wave		2004 Wave		Viewing Classification
	Frequency	Percent	Frequency	Percent	
None	17	2.6	32	4.8	Light Viewers
Less than 5 hours	187	28.2	206	31.2	
5 to 9 hours	175	26.4	182	27.5	Medium Viewers
10 to 14 hours	124	18.7	102	15.4	
15 to 19 hours	43	6.5	40	6.1	Heavy Viewers
20 to 24 hours	40	6.0	43	6.5	
25 to 29 hours	24	3.6	12	1.8	
30 to 34 hours	16	2.4	16	2.4	
35 or more hours	37	5.6	28	4.2	
Total	663	100.0	663	100.0	

In order to run some categorical tests, the 9 levels of TV viewing were converted into a 3-level ordinal scale according to viewing reported in 2000. Cut-points were assigned arbitrarily to produce three roughly equal-sized television viewing groups. Light viewers were those who reported “none” to “<5 hours per week” (31%); Medium viewers were those who reported from “5 to 9” and “10 to 14” hours per week (45%); and Heavy viewers were those who reported more than 15 hours of viewing per week

(24%). In correlation and regression analyses, the original television viewing variable was used as an interval scale, without modification, since the intervals are of equal size.

The data shows a general reduction in TV viewing from time 1 to time 2 ($t=2.75$, $p=.006$). Television viewing in 2000 is significantly correlated to viewing level in 2004 (Pearson $r=.260$, $p<.001$), which means that previous viewing patterns tend to remain across time. Such a low coefficient confirms the general reduction in viewing hours.

Table 2. Television viewing by gender and race

	2000 Wave			2004 Wave		Between Wave t-test
	N	Mean	SD	Mean	SD	
Overall	663	3.76	1.997	3.51	1.911	2.750**
Males	326	3.95	1.995	3.63	2.018	2.340*
Females	337	3.59	1.985	3.40	1.797	1.530
Between Group T-test		2.331*		1.558		
Whites	328	3.45	1.641	3.24	1.570	1.88 [†]
Blacks	183	4.46	2.413	4.10	2.278	1.67 [†]
Hispanics	152	3.62	1.949	3.38	1.956	1.16
Between Group ANOVA F		16.40***		12.850***		

Statistical Significance: [†] $<.10$; * $<.05$; ** $<.01$; *** $<.001$

In 2000, females watched significantly less than males (Table 2). Females further reduced their average viewing by 2004, but males show an important reduction in television consumption by 2004 ($t=2.34$, $p=.02$), and at time 2 there is no significant difference in viewing among males and females ($t=1.55$, $p=.120$). This pattern is consistent with findings in studies of adolescents' viewing. Roberts and Foehr (2004)

found that females showed an earlier reduction in their consumption, and eventually males also reduced their viewing.

Blacks tend to report a higher level of viewing than whites and Hispanics, consistent with many findings in media consumption research (Bales, 1986; Blosser, 1988; Roberts & Foehr, 2004). Greenberg, Mastro, and Brand (2002) found this pattern repeated in several academic studies and in Nielsen reports. From time 1 to time 2 everyone shows a reduction in viewing, but blacks maintain a higher viewing in average ($F= 12.85$, $p<.001$). Only 20% of blacks were classified as light viewers and 35% as heavy viewers, while 34.5% of whites and Hispanics were classified as light viewers and 21% of them as heavy viewers (see Table 3 and Figures 14 and 15 below).

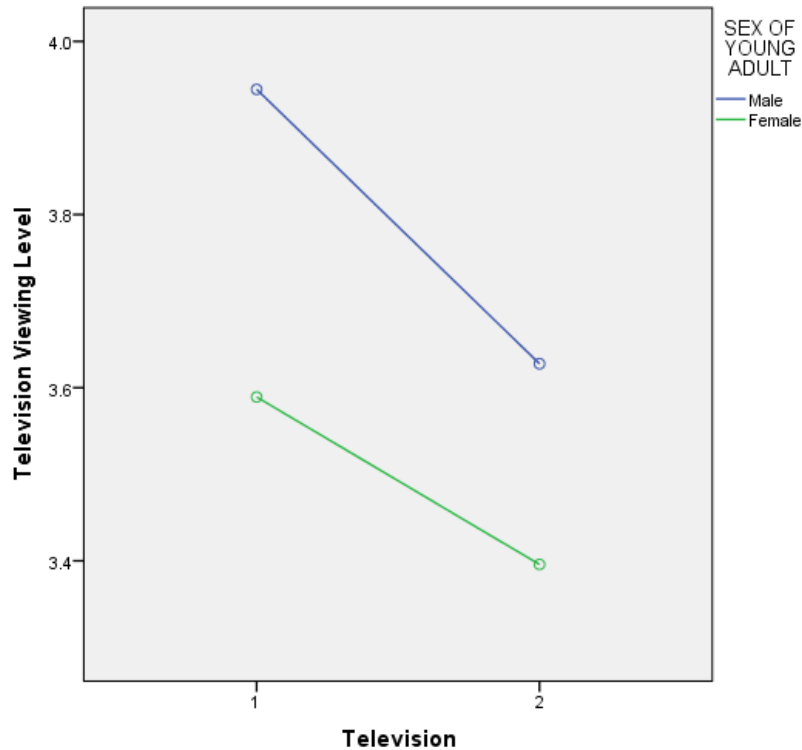
Table 3. Television viewing by ethnicity.

Ethnicity	N	Television Viewing levels		
		Light	Medium	Heavy
White	328	34.5%	46.6%	18.9%
Black	183	20.8%	44.3%	35.0%
Hispanic	152	34.5%	42.8%	22.4%

Since viewing patterns are reported in intervals of 5 hours and not daily or weekly hours, it is not possible to calculate the average viewing in hours. However, the pattern of responses observed in this sample is similar to that found in other studies of television consumption among adolescents (Comstock & Scharrer, 1999; Roberts & Foehr, 2004; Eggermont, 2006). Roberts and Foehr (2004) found that around 60% of

young adults watch over 1 hour per day, and the average consumption is 2.23 hours (p. 59), and males watch more than females As they grow older, they have equivalent viewing levels (Eggermont, 2006).

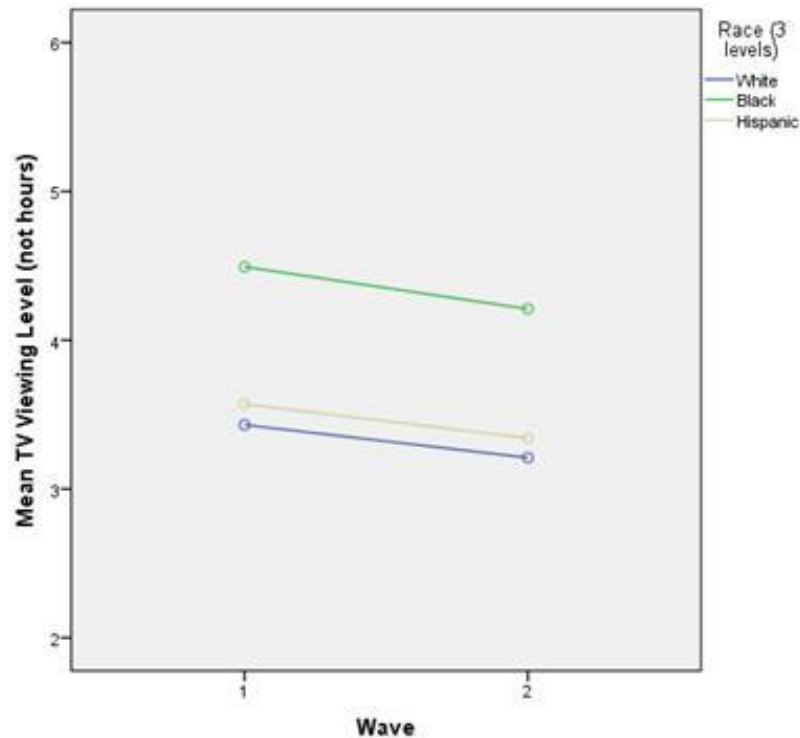
Figure 14. Television viewing by gender.



In this sample, it is clear that subjects tend to underestimate their weekly consumption: 30% report less than 5 hours per week, and less than 6% report over 5 hours a day, whereas Roberts and Foehr (2004) had found 14% of young adults in the higher range of viewing. It is likely that respondents underestimated their average viewing due to the weekly frame of the question. However, the scale is still useful as a classification of general levels and trends of viewing. Gerbner and the cultivation research team have emphasized that the viewing measure is not meant to be a precise

measurement, but a general notion of relative level of viewing (Shanahan & Morgan, 1999).

Figure 15. Television viewing by ethnicity.



Dependent variable: Mastery

The Pearlin Mastery scale is a measure of perceived control developed by Leonard Pearlin (Pearlin et al., 1981). The concept of Mastery refers to “the extent to which people see themselves as being in control of the forces that importantly affect their lives” (p. 340). It is a seven-item scale that is assessed with a four-point Likert-type scale (without the neutral mid-point).

In the NLSY, the scale was introduced by the interviewer with, “The next series of sentences describes the way some people feel about how much control they have over

their lives. After each statement, please tell me whether you strongly disagree, disagree, agree, or strongly agree.”

- A. There is really no way I can solve some of the problems I have.
- B. Sometimes I feel that I'm being pushed around in life.
- C. I have little control over the things that happen to me.
- D. I can do just about anything I really set my mind to.
- E. I often feel helpless in dealing with the problems of life.
- F. What happens to me in the future mostly depends on me.
- G. There is little I can do to change many of the important things in my life.

Factor analysis using rotation (Varimax) of the Pearlin Mastery scale extracted two factors on both waves (see Table 4 below). The first factor, which accounted for most of the variance (almost 40%), included the five items associated with the perception of powerlessness (e.g., “I have little control over the things that happen to me”), and the second factor, which accounted for about 17% of the variance, included the two items associated with the perception of internal control (i.e., “I can do just about anything I really set my mind to” and “What happens to me in the future mostly depends on me”). Previous work by Pearlin and other researchers has not analyzed these two dimensions separately, but the scale is always treated as unidimensional.

The issue of the multi-dimensional nature of perceived control has been acknowledged since the original work with the locus of control scale by Phares (1956) and Rotter (1966). While the internal control dimension is thought of as based on the estimation of available personal resources, the external dimension was identified with attributions of control by fate, luck, chance, and powerful others. Though Rotter acknowledged these differentiated dimensions of attributions of control, the scale was reduced to only one dimension with two extremes: internal and external control.

Levenson (1981) developed a multidimensional locus of control scale which separated the original index into three dimensions: internal control, powerful others, and chance. Levenson argued that while those who attribute control to chance believe in the basic unordered nature of the world, those who attribute control to powerful others are assuming an ordered and predictable world, which happens to be under the control of powerful others. Those might feel little control at some times, but the belief in powerful others implies the possibility of learning to play their game and achieve some control. Thus Levenson suggested the three dimensions had to be used separately.

The Pearlin Mastery scale solves the conflict between chance and powerful others by not identifying the sources of external control. All four items in the powerless dimension refer to a general lack of control without specific attribution of control by an external source. Thus the two dimensions are actually one dimension of control with positively and negatively worded items that tap on the same general perception of personal control over life situations.

The Mastery Index was constructed by adding all seven items after reversing the values for items D and F. Table 4 shows the descriptive statistics for the indexes in each sample. The indexes are coded internally. That is, the higher the value, the more internal or empowered the respondent perceives herself. The distribution of the Mastery scale has a roughly normal shape.

Table 4. Factor analysis for mastery scale (both waves).

	Wave	2000		2004	
		1	2	1	2
Components					
	Eigenvalues	2.74	1.18	2.78	1.15
	% of variance	39.1	16.9	39.7	16.5
There is really no way I can solve some of the problems I have.		.717	.098	.746	.058
Sometimes I feel that I'm being pushed around in life.		.729	-.002	.772	-.026
I have little control over the things that happen to me.		.701	.219	.680	.184
I can do just about anything I really set my mind to.		.113	.781	.107	.821
I often feel helpless in dealing with the problems of life.		.735	.128	.728	.182
What happens to me in the future mostly depends on me.		.048	.818	.142	.801
There is little I can do to change many of the important things in my life.		.489	.489	.553	.262

*Only rotated coefficients are reported in the table.

The data for 2000 show a skewness of .004, which means that it is well centered around the mean; and kurtosis was .360 which means the distribution has a high peak in the mean (20.5% of the sample scored exactly the mean value), with slightly heavy tails. In 2004 the skewness was .137, which evidences the distribution skewed to the positive side of the mean (22.32), which is expected since there was a generalized growth in perceived control. Kurtosis in 2004 was -.449, which shows lighter tails, that is, the distribution is concentrated within a smaller range. Cronbach's alphas confirm good reliability in the measurement, with roughly identical coefficients at both times (Alpha2000 = .737; Alpha2004 = .740). Alphas were not greatly improved when the

second component was eliminated (Alpha2000 = .741; Alpha2004 = .753). Thus the complete scale was used for all analyses. The measure of Mastery for the overall sample shows a significant change toward higher mastery across time ($t=6.23$, $p<.001$) and the autocorrelation of mastery at time 1 with time 2 is positive and rather small ($r=.256$, $p<.001$).

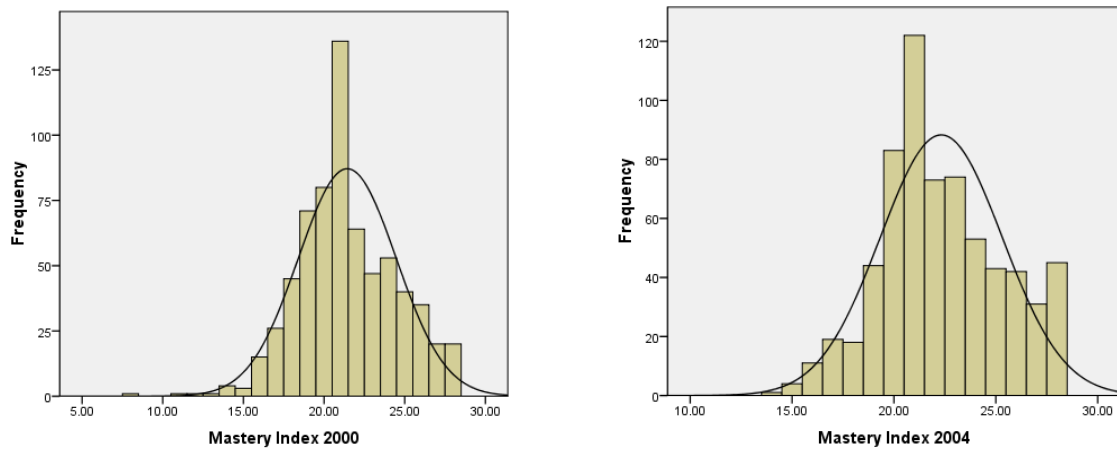
Table 5. Mastery index by wave.

Index	Descriptives			Analysis			
	N	Mean	SD	Alpha ^a	Skewness	Kurtosis	t-Test ^b
Mastery 2000	663	21.44	3.03	.737	.004	.360	-6.23 ***
Mastery 2004	663	22.32	2.99	.740	.137	-.449	

^a Cronbach's Alpha.

^b Paired samples t-test. * $p<.05$, ** $p<.01$, *** $p<.001$

Figure 16. Distribution of mastery index for waves 1 and 2



Control factors

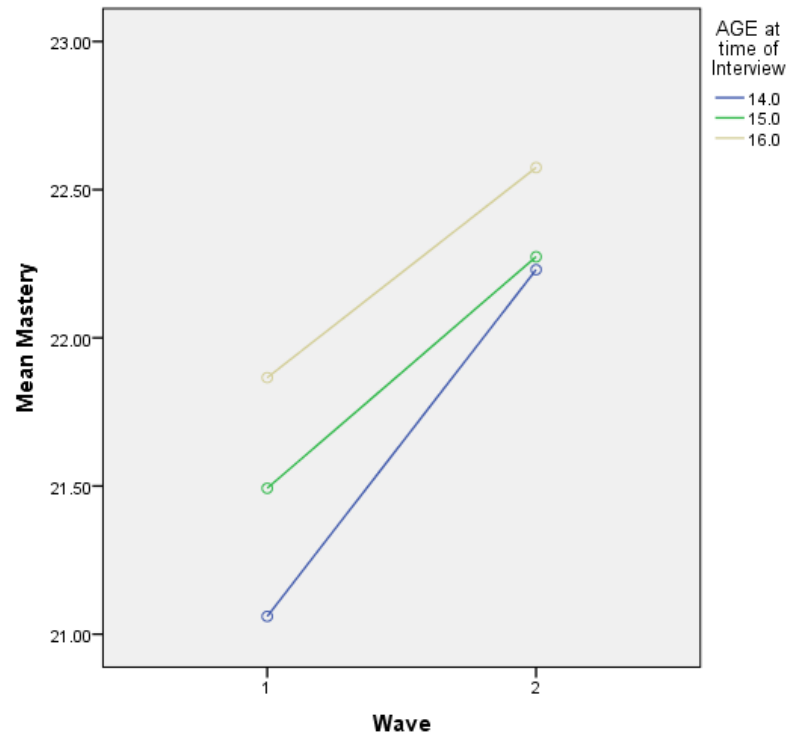
Six socio-demographic factors were included as controls in this study: age, gender, ethnicity, education, health status, and mother's education as an indicator of

socio-economic status. All these factors have been consistently found to be predictors of both television viewing and perceived control. These control factors will be introduced to test for spuriousness of the hypothesized association between television and mastery, and also to look for sub-group specific effects.

Age

Age dispersion in this sample is very narrow. The sample only includes adolescents between 14 and 16 years old who were first interviewed as young adults for the 2000 wave. As mentioned above, during adolescence age is one of the main predictors of locus of control (Lewis, Ross, & Mirowsky, 1999). As children age and gain more control of their body and their mental resources and establish an identity, they feel and actually are more in control of their environment. In wave 1, the younger kids are significantly more external than the older ones, and each additional year of age is shown to represent significant increases in mastery ($F=2.95$, $p<.05$). There is a positive association between age and mastery in wave 1 ($r = .094$, $p<.05$). At the longitudinal level, each age group gains in average a significantly higher level of mastery by time 2 (see Figure 17). In wave 2, the difference between the age groups is no longer statistically significant ($F=.613$, $p=.542$), and age is no longer correlated with mastery ($r=.037$).

Figure 17. Mastery gains over time by age group.



Research on perceived control using adult-oriented measures (e.g., Mastery) usually avoids recruiting subjects under 14 years old because the conceptualization of control and the effects of the construct on self-concept do not develop until adolescence, when the individual is expected to have a better understanding of the forces that affect personal control. Research with adolescents has found evidence of construct stability and consistent growth over time towards internality among adolescents, with no significant differences by gender in perceived control during adolescence (Cairns, McWhirter, Duffy & Barry, 1990; Chubb, Fertman & Ross, 1997).

Adolescents appear to become more internal over time (Knoop, 1981). The Youth in Transition project, a longitudinal study, found that in adolescent boys, locus of control became more internal from tenth grade to one-year post-high school, with the

greatest change occurring between the tenth and eleventh grades (Bachman, O'Malley, & Johnston, 1978). Cairns et al. (1990) had similar results. Their study spanned eighteen months, with the average age of 17 at the first of two measurement times. The data in the present study confirms those patterns: from wave 1 to wave 2 adolescents became significantly more internal in their perceived control.

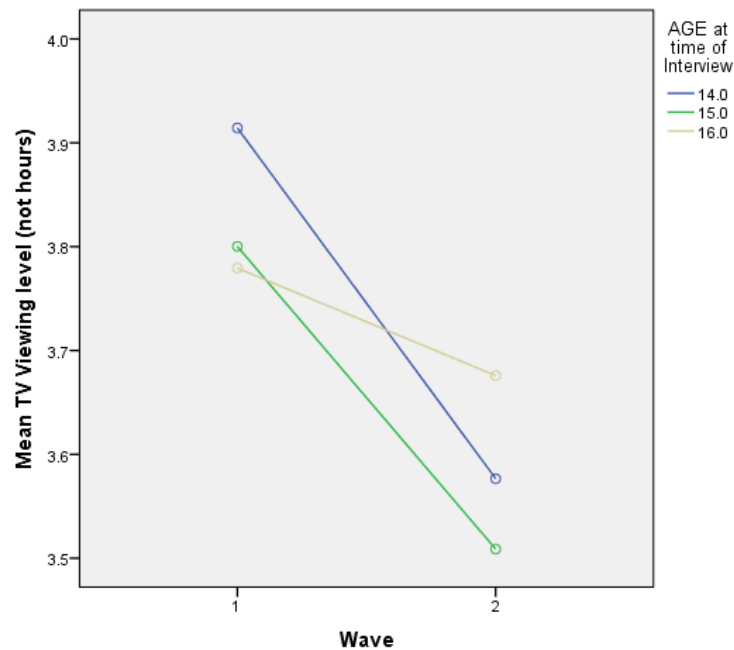
The mastery construct shows relative stability across time. Overall, average mastery is positively and highly correlated between waves ($r=.265$, $p<.001$). The association is roughly the same for the three age groups (see Table 6 below). The growth slope is sharper for the younger ones ($r=.267$), and it explains that by time 2 respondent's age do not account for differences in mastery levels ($F=.613$). Adolescents' mastery tend to level off by age 20.

Table 6. Association between age and mastery across time.

Age in 2000	2000			2004		Between Waves	Correlation Coefficient
	N	M	SD	M	SD	t-test	Pearson r
14	200	21.06	3.12	22.23	2.92	4.522***	.267***
15	329	21.49	2.98	22.27	3.00	3.896***	.263***
16	134	21.87	2.98	22.57	3.09	2.221*	.260**
Overall	663	21.44	3.03	22.32	2.99	6.227***	.265***
Within Wave Anova F-test		2.953*		.613			
Pearson r		.094*		.037			

Note: 2-tailed paired-samples t-tests were applied to the longitudinal comparisons, and ANOVA tests for the cross-sectional comparisons. Pearson correlations within wave tested Mastery x Age. * $p<.05$, ** $p<.01$, *** $p<.001$

Figure 18. Television viewing by age.



During mid-adolescence, age is negatively correlated with television viewing. Between waves there is a significant decrease in television viewing for all age-groups (Figure 18). This is a normal pattern in television viewing often reported in research (Comstock & Scharrer, 1999; Roberts & Foehr, 2004). Older teenagers engage in a variety of academic, work, and social activities that take up more of their time. Thus, a decrease in viewing is expected during this period. The auto-correlation of television viewing at time 1 and time 2 is also positive and relatively small ($r=.260$, $p<.001$).

Gender

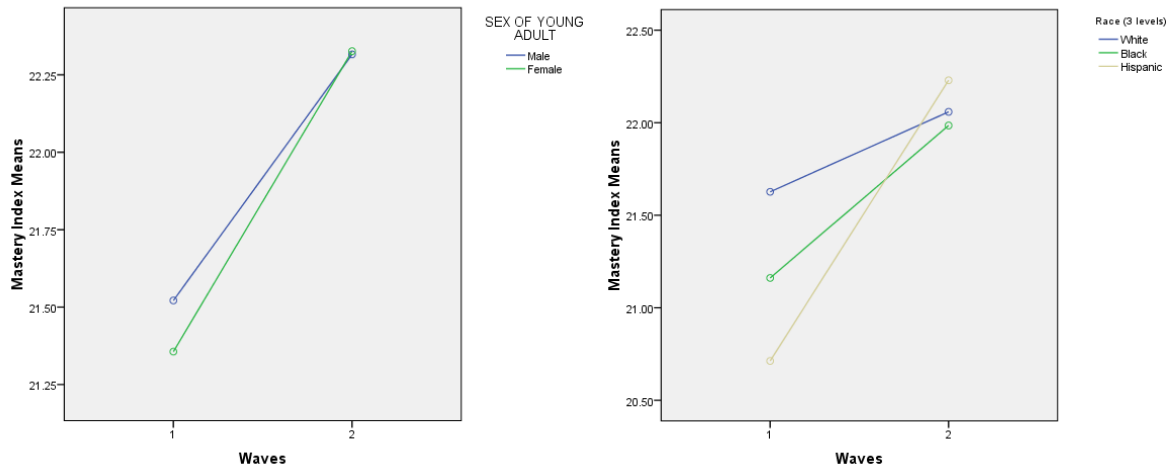
Research results on gender differences in perceived control during adolescence have been mixed. Some studies have found that females evidence more external orientations than males (Cairns et al., 1990; Nolen-Hoeksema, Larson & Grayson, 1999;

Cheatham, Shelton & Ray, 1987). A meta-analysis of 97 samples of college students, using a total sample of over 18,000 students across four decades (Twenge, et al., 2004), found women were consistently more external than men. They observed that, over a forty-year span, college students have become significantly more external, and for women, the trend was stronger.

Other studies did not find gender differences in perceived control (Adame, Johnson, & Cole, 1989; Dellas & Jernigan, 1987). Archer and Waterman (1988) reviewed twenty-two studies for gender differences on several variables including locus of control. In fifteen of the studies no gender differences were found; in six studies, the males were more internal; and in one study, the females were more internal. Archer and Waterman concluded that there is not enough evidence in the research to show that there are gender differences.

Ross and Mirowsky (1989) found no gender difference in perceived control among a sample of over 800 adults from Illinois. Chubb, Fertman and Ross (1997) analyzing a sample of 174 adolescents across a four-year panel found no difference in levels of perceived control by gender, though the trajectories in locus of control growth varied by gender. Mirowsky and Ross (2003, pp. 95-112) conclude from their extensive literature review and their own research that gender differences in perceived control do exist, but appear later in life, associated with differing gender patterns of stress from work load and family.

Figure 19. Mastery by gender and ethnicity.



In the current sample, gender differences are not significant for either wave, and both males and females evidence a significant growth in perceived control across time (see Figure 19a). Males were slightly more internal than females in the 2000 wave, but by 2004 their levels of mastery were practically the same ($t=-.045$, $p=.964$).

Ethnicity

Ethnicity has also been a relevant factor of perceived control. Blacks have often been found to be more external than whites (Wade, 1996; Houts & Kassab, 1997). In the current sample, whites were marginally more internal than non-whites in the 2000 wave ($F=2.63$, $p=.076$), but all ethnic groups gain mastery and merged to a very similar level by the 2004 wave ($F=.516$, $p=.597$; see Figure 19b above). Regarding television consumption, whites watch the least and blacks watch more on average.

However some studies have found that once minority young adults reach adulthood and encounter objective constraints, discrimination, and deprivation, their

sense of control tends to be reduced (Wade, 1996; Lewis, Ross & Mirowsky, 1999). In general, for this sample, race does not seem to be an important predictor of Mastery on its own (especially at Time 2). Also, within the same race, the difference by gender regarding mastery was not significant in either wave. Though the reported lack of direct correlation between gender and race with Mastery might suggest leaving them out of the equation, they will remain in the model because cultivation has consistently found that social power in television runs along the lines of gender, race, and economic privilege. This project is testing a model of television's construction of power through perceived control. Central to this model are questions about the role of these three indicators of power in the amount of exposure to television messages and their incorporation into their worldviews, as observed in the reported level of mastery.

Cultivation research findings have shown differing cultivation effects from television viewing by gender. Morgan (1982, 1987) found a mainstreaming effect over time, where female and male perspectives on sexism came closer for heavy viewers, while they remained significantly different for light viewers. Busselle and Crandall (2002) found that genre-specific viewing was associated with differences in perceptions of economic, educational, and motivational traits of blacks. Specifically, news viewing was more associated with racist attitudes. Similarly Armstrong, Neuendorf and Brentar (1992) found that TV news viewing was associated with perceptions that in comparison to whites, black Americans are relatively worse off socioeconomically, though they also observed that greater exposure to TV entertainment content was associated with beliefs that black Americans enjoy a relatively higher socioeconomic position with

respect to average income, social class, and educational achievement. Thus even if overall gender and race do not evidence an effect on mastery, cultivation would suggest that since television viewing tends to portray both females and minorities in a negative light, over time we can expect an interaction between viewing and being socially disempowered.

Educational Attainment

Educational attainment has been found to be the most important predictor of a sense of personal control in American adults (Mirowsky & Ross, 1998; Lewis, Ross, & Mirowsky, 1999). A reciprocal relationship between the factors can be established from the data. People with higher perceived control will most likely go through the long and arduous process of completing education programs, and education provides people with a wealth of resources and strategies to solve problems effectively, which then contribute positively to the perception of control. Respondents' educational attainment in 2000 is correlated with concurrent mastery ($r = .114$, $p < .01$), but when age is controlled, this effect disappears because at this stage in life, education and age are practically the same. Mastery in 2000 is positively correlated with respondents' educational attainment in 2004 (Pearson $r = .187$, $p < .001$). By wave 2, educational attainment becomes the most important factor explaining mastery estimations for the sample overall (see Table 7 below).

Table 7. Correlation matrix between education and mastery.

	Simple r		Partial r by age	
	Mastery 2000	Mastery 2004	Mastery 2000	Mastery 2004
Education 2000	.114**	.085*	.071	.079*
Education 2004	.187***	.216***	.171***	.213***

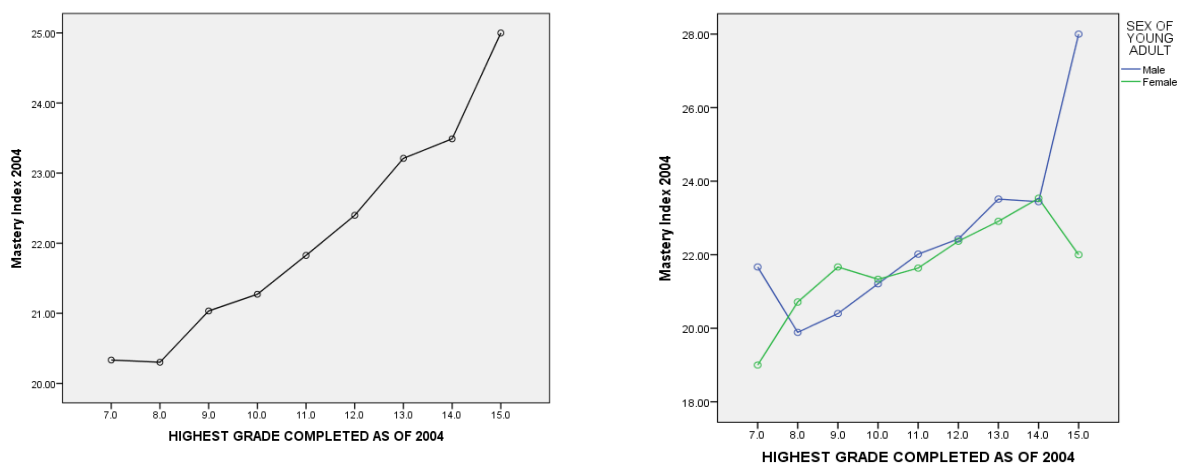
* $p < .05$; ** $p < .01$; *** $p < .001$

In the NLS survey, young adults were asked a wide range of questions concerning their education. For this project the main indicator of level of education is the number of years of formal schooling the respondent has completed. The average education was 8.5 years in the 2000 wave, and the effect is undistinguishable from age. But by 2004, education is not associated with age anymore. The average education is 11.8 years in 2004; that is, by the time average adolescents have finished high school, 74% of the sample had done so. According to U.S. Census data from 2003 (Stoops, 2004), 87% of young adults aged 25 to 29 had completed high school, and this rate had leveled off since the early 1980s. The data for this study oversampled disadvantaged groups (blacks, Hispanics, poor whites), which likely explains the relatively smaller number (74%) of high school graduates among the sampled adolescents aged 18 through 20 in 2004.

The contribution of educational achievement to mastery is the most important factor among all the controls in 2004 (Wave 2), when respondents are 18, 19 and 20 years old. There is a significant difference among those who did not finish high school

(26%), those who finished high school (54%), and those who continued studying after high school (20%). Each additional year of schooling has a significant contribution to the sense of control ($F=13.4$, $p<.001$), as can be seen in the graph below. There is no difference in mastery scores in 2004 between males and females. Females achieved almost half a year more schooling than males on average; however the effect of education on mastery seems more relevant for males ($r=.254$, $p<.001$) than for females ($r=.181$, $p<.001$).

Figure 20. Education and mastery in 2004, by gender.



Parental educational attainment

Parental educational attainment has been employed as an indicator of socioeconomic status by other researchers (Mizell, 1999), and its contribution to mastery has been found to be more important than household income (Lewis et al., 1999). In the NLS sample, the young adult's mother's education was available for all cases, measured through an item that asked the number of years of formal education completed

($M=12.5$ years, $SD=2.2$). Regarding the education of the father or male figure in the household, the dataset includes information about the education of the adult males present in the household. The educational level of the father, the spouse of the respondent's mother, and her partner are reported independently through several items. The father's education is reported in a number of years, while the spouse's or partner's education is reported in a 1 point scale where 1 is less than high school, 2 is high school, and 9 is PhD.

The data reported includes information on the education of the male figure for 93% of the respondents. Father's education is available for 221 cases (33%), spouse's education is available for 373 cases (56%), and partner's information is available for 43 cases (7%). There are some cases that overlap information of father and spouse or partner. A re-coded variable was created with the available information. Whenever the spouse's information was available, it was preferred, followed by the partner's information and finally the father's information. Since this index is used as an indicator of socio-economic status, it is more relevant to have the information of the male actually living in the household.

All scales were reduced to a three-level scale where 1 is less than high school, 2 is high school, and 3 is more than high school. The available raw variables and the final recoded indicator is described below in comparison with the mother's education.

Table 8. Comparison of parental education indicators

	Mother's Education		Spouse	Father	Partner	ReCoded Index of Male Figure Education
Education Level	N (%)	Mean (SD)	N (%)	N (%)	N (%)	N (%)
Overall	663	12.5	373	221	43	618
	(100%)	(2.2)	(56%)	(33%)	(7%)	(93%)
Less than HS	142 (21%)	9.8 (1.8)	43 (11%)	42 (19%)	7 (16%)	99 (16%)
High School	257 (39%)	12 (0.0)	180 (48%)	126 (57%)	26 (60%)	307 (50%)
More than HS	264 (40%)	14.4 (1.5)	150 (40%)	53 (24%)	10 (23%)	212 (34%)
Pearson Correlation to Mother's Education			.165***	.311***	-.067	.368***

* p < .05; ** p < .01; *** p < .001

Proportion of heavy TV viewers in each category is shown as indicator of association with mother's education.

Pearson correlations and Anova reported on bottom line were calculated with complete scales in all cases.

Instead of using a mixed indicator with limited reliability, due to the different scales employed to report educational attainment from mother and father, the mother's educational attainment will be the only indicator of parental education in the equation. Mother's education is reported in years of formal education (Range: 0-20). It allows for additional precision in calculations since it can be used as scale in regressions or a 3-level ordinal variable for sub-group comparisons.

Mother's education (mean=12.5 years, SD=2.2) was recoded into a 3-level ordinal variable for sub-group analyses: 1 is less than high school comprising 1 to 11 years of education (21%); 2 is completed high school, equal to 12 years of education (39%); and 3 is more than high school, above 12 years of education (40%). Table 9 below shows that mother's education is positively correlated to mastery during early adolescence (wave 2000), but the correlation is weak when the adolescents become young adults (wave 2004). Also mother's education is marginally correlated with television viewing at wave 1. ($r=-.067$, $p=.083$) though not with amount of viewing at wave 2 ($r=.045$, $p=.245$). The negative association suggests a common finding in research of lower viewing among those from privileged backgrounds. Father's education, which was available for only 33% of the sample, did not show a significant association to television viewing ($r=.008$, $p=.90$) or mastery ($r=.026$, $p=.70$) for the 2000 wave. However, for the 2004 wave father's education showed a significant association to mastery ($r=.169$, $p<.050$), but due to the limited number of cases ($n=221$) that report this information, interpretation becomes highly complicated. The father's educational attainment seems better associated with the mother's education indicator and shows similar associations to the dependent and independent variables. A re-coded index of "household male figure's education" would allow for the use of an indicator that describes almost the full sample, and its associations with the model's variables is certainly very interesting, showing significant or marginally significant correlations (table 9 below). However, the lack of certainty about the actual presence of the referred

father in the household makes the indicator's influence rather difficult to interpret, thus the male figure's education will be left out of the scope of the present report.

Table 9. Parents' educational on independent and dependent variables.

	N	%	Mastery 2000	Mastery 2004	TV Viewing 2000	TV Viewing 2004
Mother's Education	663	100	.105**	.051	-.067 [†]	-.045
Father's Education	221	33	-.026	.169*	.008	-.098
Spouse's Education	373	56	.139**	-.003	-.059	-.038
Male Figure's Education	618	93	.145***	.076 [†]	-.068 [†]	-.081*
Average Parental Education	663	100	.164***	.066 [†]	-.073 [†]	-.066 [†]

Pearson correlation coefficients. * $p < .05$; ** $p < .01$; *** $p < .001$

The findings related to mother's education suggest that while parental socioeconomic status has a larger influence on adolescents, by the time they become adults other factors (e.g., own education, jobs, etc.) are much more relevant. Also, parental education is associated with lower television consumption in general, though the association is not statistically significant. These patterns of association are consistent with research findings and theory on perceived control and television consumption.

Health Status

Health status and perceived control are strongly associated. A reciprocal relationship has been found in research. On the one hand, health status has a direct influence on perceived control, since it often represents actual limitations of control (Pearlin, 1981; 1989) and can lead to diminished expectations of control in other areas through a learned helplessness effect (Abramson, Seligman, & Teasedale, 1978; Peterson, Maier, & Seligman, 1993). On the other hand, sociologists (Mirowsky & Ross, 1988; Seeman & Seeman, 1983; Seeman, 1985) have established models that explain how people who experience a high sense of control are more likely to lead healthy lifestyles (e.g., preventive care, optimism, low drinking, no smoking, exercising) that lead to better health status, while people with a low sense of control lead more unhealthy lifestyles (e.g., smoking, drinking, being overweight, physician dependent, and sedentary).

In general, chronic illness is not common for teenagers, and it is not likely that lifestyle choices have caused health problems that diminish the sense of control by early adolescence. In the 2000's sample almost 70% describe their health as very good or excellent, 24% rate it as good, and only 8% fair or poor. In the 2004 sample, health reports are significantly worse, with only 62% reporting very good or excellent health ($t=3.44$, $p<.001$). Those who have a lower educational achievement by 2004 are more likely to report worse health than the well-educated.

All factors included as controls in the model have a significant moderating contribution on the association described by the hypotheses of the study in at least one

wave. (see table 10 below). Controls will be used to test causality attributable to third variables and for sub-group analyses to look for mainstreaming and resonance patterns.

Table 10. Correlations of Controls and Dependent and Independent Variables.

Control Factors	TV Viewing 2000	TV Viewing 2004	Mastery 2000	Mastery 2004
Sex (female=2)	-.090*	-.061	-.027	.002
Age	-.023	.014	.094*	.037
Race: White	-.158**	-.139**	.085*	-.010
Race: Black	.215**	.192**	-.046	-.013
Race: Hispanic	-.040	-.039	-.053	.027
Education 2000	.020	.026	.114**	.085*
Education 2004	-.056	-.044	.187**	.216**
Mother's Education	-.067	-.045	.105**	.051
Health 2000	-.084*	-.014	.170**	.160**
Health 2004	-.022	-.116*	.138**	.215**

Pearson Correlation Coefficients: Sig. * p<.05; ** p<.01; *** p<.001

Table 11 shows the correlation coefficients among all controls. These correlations evidence common patterns of the social structure. Females tend to complete more years of schooling: 25% of females had at least one more year of schooling after high school, whereas only 15% of males did. Mother's education, our only indicator of socioeconomic status, is correlated with educational attainment by 2004. Parental education is also associated with better health in 2004. Being white is associated with better parental education and higher personal educational attainment. Personal educational attainment is associated with better health in 2000, and 2004.

Blacks tend to have less educated mothers, and Hispanics have a lower educational attainment.

This section described the specific measures through which the concepts of perceived control and television viewing are observed. The literature has identified hundreds of social factors associated with specific patterns in mastery estimations or television consumption. The set of six factors included in this model sought to remove the effect from the most basic demographic identifiers of age, gender, education, socioeconomic status, ethnicity, and health. The use of these six third variables in the model offers a robust test of the hypothesized effect. If the expected associations remain statistically significant after applying these controls, we can more confidently affirm the association is not spurious.

The correlation matrix between controls (Table 12, below) shows how the correlations among control factors are small and do not evidence a pattern that could suggest risk of multicollinearity. The auto-correlations between repeated factors (education and health) are high, as expected, but those factors will not be introduced in the same model. Education in 2000 is indistinguishable from age, and thus is eliminated from the cross-sectional model, education in 2004 is correlated with all factors, which evidences that education achievements can be considered both cause and effect of class privilege.

Table 11. Correlation matrix among the control factors.

Control Factors	Age	Educ 2000	Educ 2004	Mother's Education	Health 2000	Health 2004	Race: White	Race: Black	Race: Hisp
Sex (F=2)	.007	.092 *	.123 **	.028	-.002	-.073	-.041	.054	-.009
Educ_2000	.613 ***		.400 ***	.055	.026	.026	-.065	.016	.060
Educ_2004	.222 ***			.178 ***	.122 **	.182 ***	.115 **	-.033	-.102 **
Mother's Ed	-.012				.028	.099 *	.147 ***	-.043	-.128 **
Health 2000	-.030					.322 **	.002	.038	-.043
Health 2004	-.027						-.021	.032	-.009

Pearson Correlation Coefficients: Sig. * p<.05; ** p<.01; *** p<.001

CHAPTER 5

RESULTS OF CROSS-SECTIONAL ANALYSIS

Introduction

Based on cultivation theory, this study looks for evidence of television's independent contribution to adolescents' constructions of perceived control. The statistical analyses were performed on a two-wave national sample which surveyed adolescents from 2000 and then again as young adults in 2004. The dataset was trimmed to focus on adolescents who were ages 14 to 16 in 2000, as described in the section above. Data was analyzed both cross-sectionally and longitudinally.

Most cultivation studies have dealt with cross-sectional data, testing television's cultivation effect with the statistical association between average level of television viewing and indices of beliefs and attitudes. This approach has repeatedly attracted criticism for spuriousness and lack of certainty about the direction of effects. Cultivation researchers have convincingly argued that cultivation is a process that is more akin to long-term patterns of cultural acquisition and cannot be characterized simply as effects (Shanahan & Morgan, 1999, p. 34). Cultivation has been tested for spuriousness using third variables, which help uncover patterns of association among sub-groups. However the criticism about the direction of causality lingers among those critics who resist to grasp the fact that there is no way to test before-after effects from television for American kids. Most children watch television before they can talk or walk, and by the time they start acting on their beliefs about the physical world, they have already been

cultivated. Still, analyzing longitudinal data like the set available for this study certainly provides some theoretical and methodological insights into the cultivation process. This study employs longitudinal statistical tests which provide evidence of an independent contribution of television to judgments about personal control over time. Its theoretical relevance lies in the possibility of observing how adolescents transition into adulthood in the company of television, specifically, how television influences viewers' expectations of control as they transition into the adult world.

Only a handful of cultivation studies have analyzed longitudinal data like those available for this study (for example, Morgan, 1982; Lee & Niederdeppe, 2011). The issue with causality has been a constant criticism to cultivation, especially since its claim of long-term effects of television exposure cannot be tested via cross-sectional studies. The panel available for this study, with a four-year lag period, is incredibly well-suited for a longitudinal test of cultivation theory. The findings might suggest cultivation patterns and mechanisms that have not been extensively discussed or described in the past.

This chapter presents the statistical analyses performed on the data from the National Longitudinal Surveys of Youth 2000 and 2004. Results are presented first at the cross-sectional level, testing hypotheses 1 and 2 on each wave independently. After this, the longitudinal versions of all hypotheses will be tested.

Analytic strategy

The analysis begins with the bivariate relationship between television viewing and mastery among adolescents within each wave. Then I will examine possible confounders of the association by regressing mastery on television viewing, controlling for gender, race, age, educational attainment, parental educational attainment, and health status. Interactions between television viewing and these factors will also be tested, looking for possible moderators of the association.

At the longitudinal level the analysis will be similar. It will begin with the examination of the bivariate longitudinal relationship between television viewing and mastery (H1), that is, television viewing in 2000 as predictor of mastery in 2004. At the same time, the reverse causality hypothesis (H2) will examine if mastery in 2000 predicts television viewing in 2004. Control factors to test for spuriousness (H3) will include gender, age, race, educational attainment, parental educational attainment, and health status. Also mastery and television viewing in 2000 will be used as controls in the respective analyses.

A third level of analysis will look for diverse effects of television viewing among sub-groups, comparing results by gender, race, parental educational, and educational attainment.

Television and Mastery: Cross-sectional Analysis

The first hypothesis (H1) predicted a negative association between television viewing and Mastery at the cross-sectional level. To test this hypothesis each wave will

be analyzed separately. The tests include analysis of distribution, Pearson correlations, categorical analysis, and multi-factor linear regressions.

Analysis of bi-variate relationships

The distribution graphs for the hypothesized relationships between television viewing and mastery show slightly opposite patterns of association between wave 1 and wave 2. For the first wave, collected in 2000, amount of television viewing shows a slight positive association to mastery (see Figure 21b below), except for the small group ($n=53$; 8%) of heavy viewers (above 30 hours a week) that report very low levels of mastery. Remember that all items in the mastery scale were re-coded positively, so that higher mastery scores mean more internality, while lower scores represent a more external outlook. The correlation for the whole sample is not statistically significant ($r = -.036$, $p = .35$), not even truncating the data to those viewing below 30 hours per week ($N=610$; $r = .053$, $p = .190$). But the apparent positive association for those watching below 30 hours per week is certainly very curious, since it goes against this study's expectation for a general negative association.

Table 12. Simple correlations between independent and dependent variables

	Mastery 2000	Mastery 2004	TV hours 2000
Mastery 2004	.256***		
TV hours 2000	-.036	-.111**	
TV hours 2004	-.056	-.096*	.260***

* $p < .050$; ** $p < .010$; *** $p < .001$

The dispersion plots (see Figure 21a) and the predicted probability (P-P) plot (See Figure 21c), which compares the residuals of the predicted value versus the real value along the normal distribution support the assumptions of normality of the data and the linearity for the hypothesized association in wave 1. The plot of residuals (Figure 21d) does not show a distinctive pattern, which strengthens the assumption of linearity.

For the 2004 wave, amount of television viewing shows a significant negative association with mastery ($r = -.096$, $p = .014$), consistent with the prediction of hypothesis 1 (see Figure 22b, below). The dispersion plot and P-P plot (Figure 21 a & c) confirm the assumptions of linearity for the wave 2 sample. In this sample, as well, a small group of heavy viewers ($n = 11$) in one viewing category (25-29 hours a week) seems to disturb the linearity of the association, reporting the highest scores in the mastery scale. If eliminated, the correlation coefficient would be slightly higher ($r = .107$, $p = .006$), and still statistically significant.

Overall, the association predicted by H1 is not supported for wave 1, when the respondents were all adolescents. By wave 2, four years later, when the respondents were young adults, the association between television and mastery appears significant ($r = -.096$, $p < .05$). Furthermore, the longitudinal overall association is statistically stronger ($r = -.111$, $p < .001$) than the cross-sectional. That is, television viewing from 2000 appears as a better predictor of mastery 2004 than television 2004.

Perceived control (observed here through Pearlin's Mastery Scale) is a complex belief rooted in many social and personal factors. The current sample has an over-

representation of blacks and Hispanics. Subjects are part of a national survey which seeks to represent people from different socioeconomic backgrounds, including an oversample of poor whites.

Figure 21. Mastery in 2000 by television viewing in 2000: Tests of linearity.

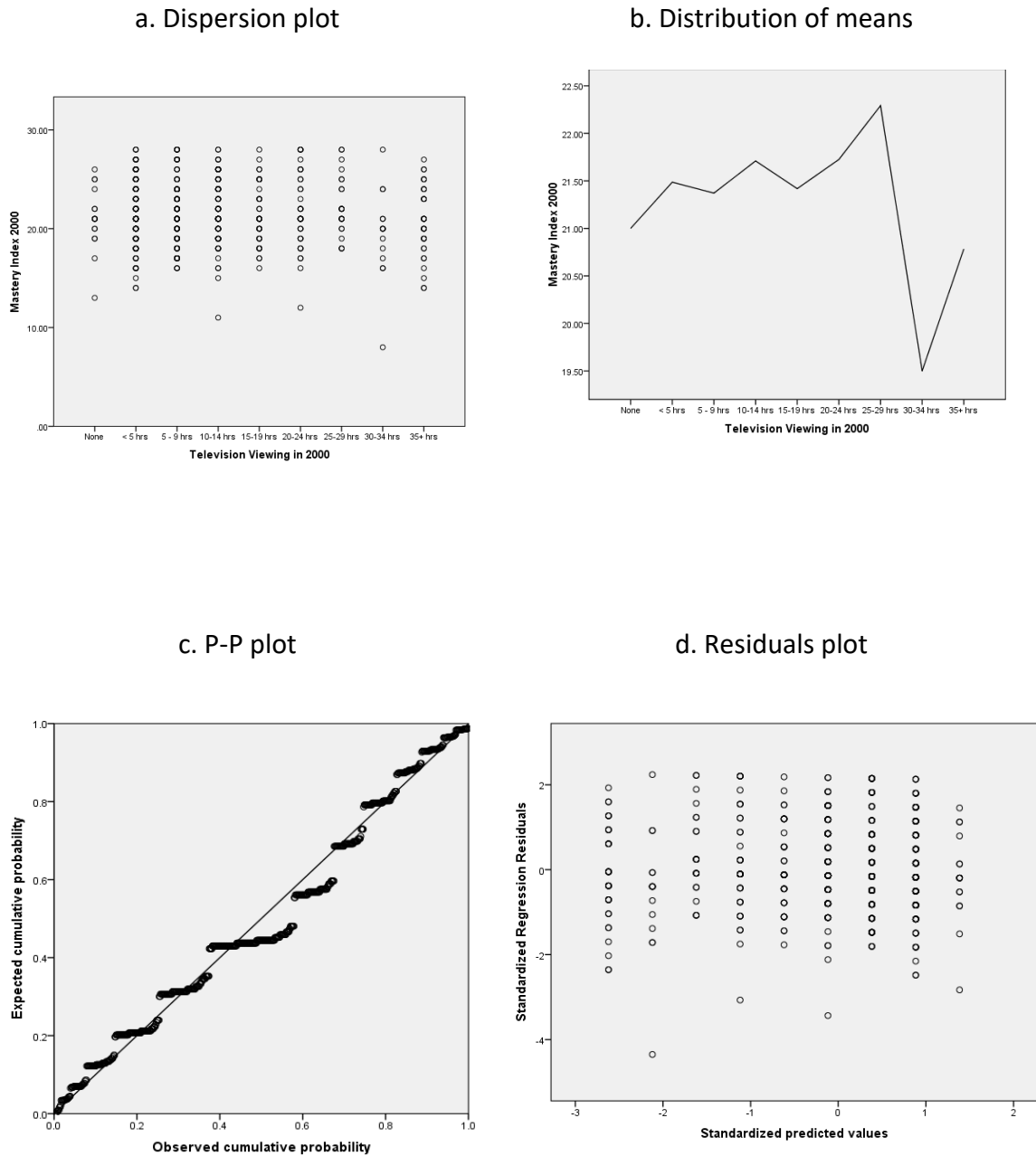
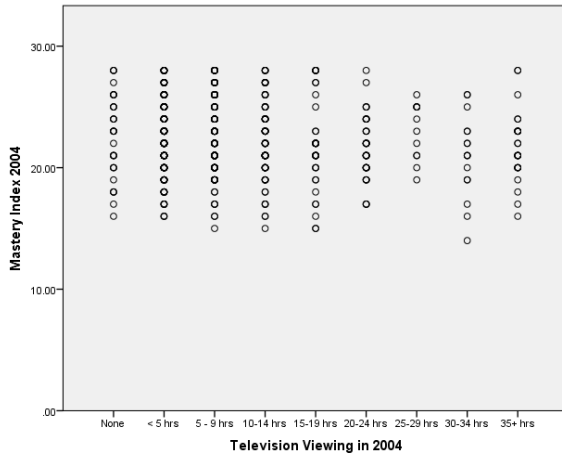
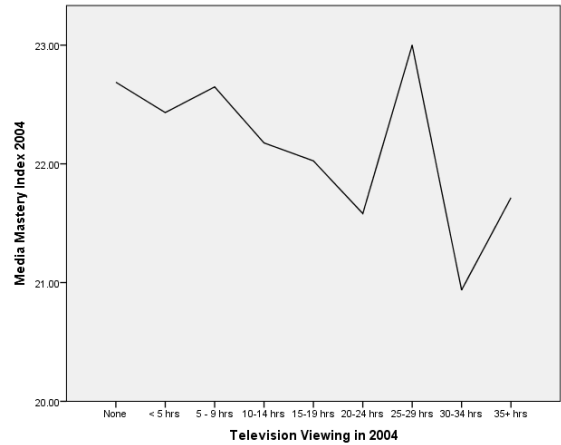


Figure 22. Mastery in 2004 by television viewing in 2004: Test of linearty.

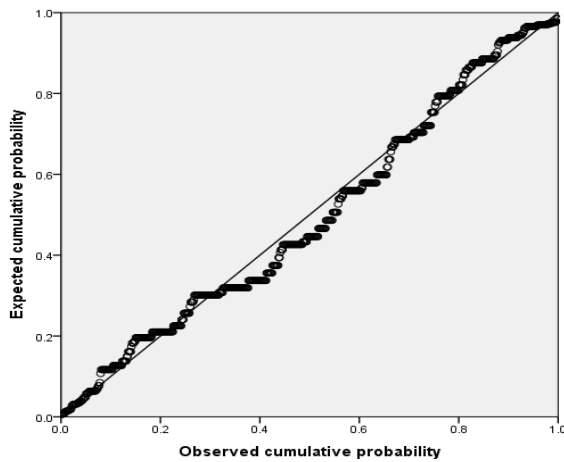
a. Dispersion plot



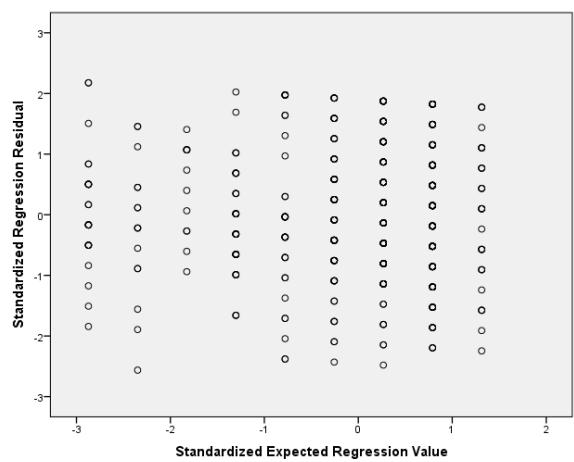
b. Distribution of means



c. P-P Plot



d. Residuals plot



These characteristics of the sample allow us to consider the complexity of the system. The relatively large sample of Hispanics and blacks will permit a more reliable

comparison to whites. Multi-factor linear regression will be employed to control for the effect of demographic factors and observe the real effect of television viewing on mastery beliefs.

Linear Regression Analysis

Cross-sectional Analysis: Wave 1

Regression analyses for wave 1 and 2 are shown in Table 14, below. Overall, the regression analysis confirms the finding of the simple correlations. The predicted association between television and mastery for wave 1 is insignificant, but it is marginally supported for wave 2.

The regression coefficients reported in Table 13 show some interesting patterns for wave 1. Older kids show greater mastery overall. This is consistent with the literature on perceived control, which has found a consistent increase of perceived control associated with age as adolescents grow into early adulthood and begin acquiring actual control over their life choices and outcomes. Mother's education, which is the only indicator of socioeconomic status, and health status are also relevant factors of mastery at this age. Respondent's education was dropped from the analysis to avoid multicollinearity because it was highly correlated with age during this period of adolescence.

In the overall analysis, there does not seem to be a significant difference due to race or gender on mastery levels in wave 1. The effect of health status on mastery

perceptions is a classic finding in the literature: when individuals feel physically limited to perform as desired due to illness, injury, or old age, they will report lower perceptions of control.

Table 13. Cross-sectional Linear Regression of Mastery on TV viewing.

Factors	Wave 1		Wave 2	
	Beta	t	Beta	T
Age	.099	2.615**	.001	.034
Sex	-.028	-.725	-.012	-.309
Race (Black)	-.063	-1.519	.017	.424
Race (Hispanic)	-.055	-1.342	.050	1.223
Mother's Education	.092	2.392*	.004	.097
Health Status	.170	4.436***	.171	4.406***
R's Education			.184	4.567***
Television Viewing	-.005	-.120	-.071	-1.823[†]
Interaction terms:				
TV x Mother's Educ	.672	3.054***		

Note: Factors are applied in the concurrent year (e.g., health 2000 to test Mastery in 2000).

Standardized regression coefficients and t values are reported; Regression Method: Enter.

Model's R^2 : Wave 1 .055, Wave 2: .084;

Durbin-Watson statistic: Wave 1: 1.925, Wave 2: 1.956

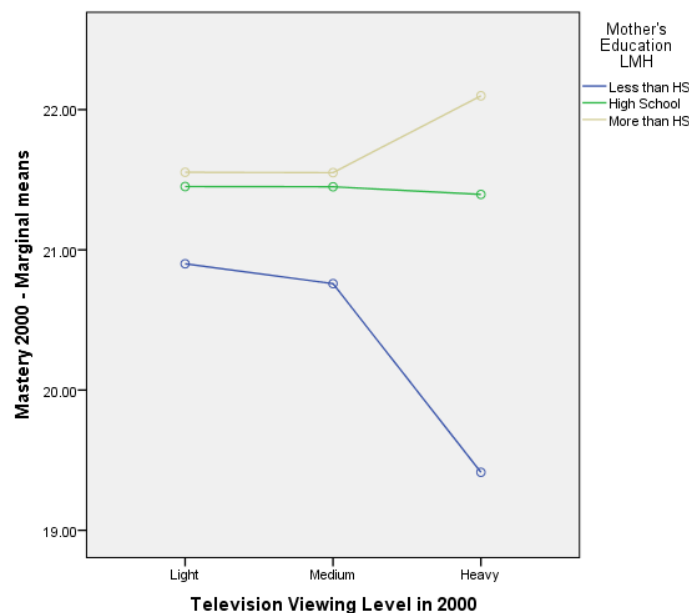
Interaction terms for TV with all factors were introduced using Remove. Only those that scored statistical significance were reported. [†] $p < .10$; * $p < .050$; ** $p < .010$; *** $p < .001$

However, finding that health ranks as the most important factor in the model is certainly unexpected for a sample of adolescents who are in the process of developing

their full physical potential. Further research into the meaning of this association is needed. Such relevance of health status for adolescents' mastery is probably due to an increased awareness of limiting physical issues (e.g., overweight, appearance, acne) or even mental health. The NLSY dataset includes more detailed information on health status, but this analysis is beyond the scope of the present work.

Though the cultivation hypothesis is not supported in the overall analysis for wave 1, results also show a two-way interaction between television viewing and socioeconomic status (indicated by mother's education) on mastery. The positive coefficient suggests that television viewing at this age reinforces the effect of the socioeconomic level signaled by mother's education. The association observed in this interaction (see Figure 23 below) shows that the expected negative association appears only among those whose mothers are less educated (i.e., less privileged).

Figure 23. Mastery in 2000 by TV viewing levels, by mother's education.



The combination of heavy viewing and having a less-educated mother works to reduce mastery. While light-viewing children from a less privileged background report in average about half a point less mastery than their privileged peers, the difference among heavy viewers from different socioeconomic background is almost 3 points.

Though television viewing was not found as a significant factor of mastery in the overall analysis, the interaction with mother's education reveals a subtle but relevant resonance effect from television's cultivation of powerlessness. Kids from privileged backgrounds get some kind of empowering effect from television content. On the other hand, on top of the negative effect from the low socioeconomic status, heavy viewing unprivileged kids also seem to learn (or confirm) powerlessness lessons from television (see Figure 23 above).

What could be insulating the children of highly educated mothers from this effect? Probably the selection or availability of contents, the parental mediation of television's stories, or a combination of these or other factors make adolescents from higher socioeconomic status likely to draw better advantages from their media consumption in terms of mastery.

Further analysis comparing sub-group regressions (Table 14, below) show that mother's education, gender and ethnicity seem to have a mild moderating effect on the association between television viewing and mastery in wave 2. This suggests that the experience of viewing television is different depending on social stratification factors often associated with power and control. It is important to remember that in wave 1 (2000) the kids were near their lowest point of mastery due to their young age. At this

stage, little of what they actually achieve informs their sense of mastery. Mastery seems to be cultivated in them through immersion into cultural settings.

Figure 24. Mastery in 2000 by TV viewing, compared by gender and age.

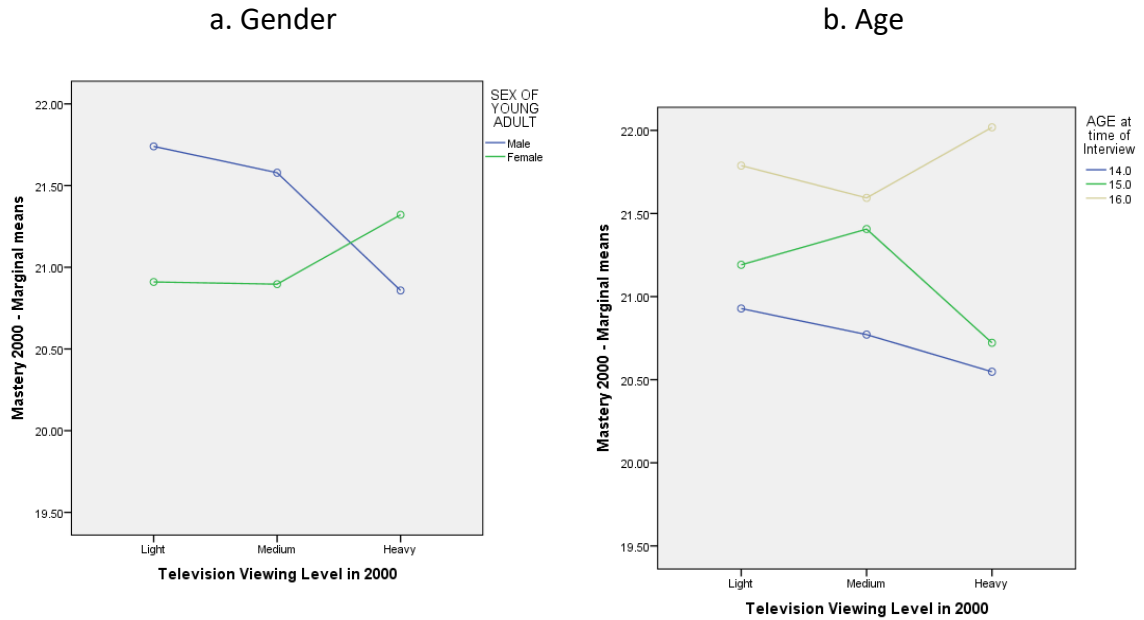
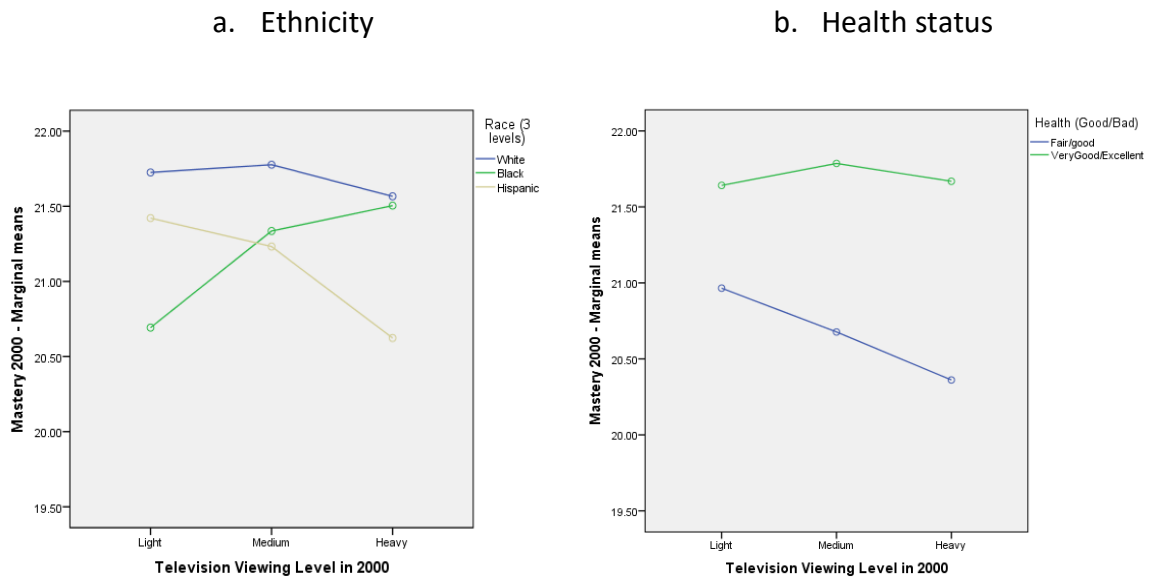


Figure 25. Mastery in 2000 by TV viewing, compared by ethnicity and health status.



Also in wave 1, a very subtle mainstreaming pattern is observed for gender (see Figure 24a, above). It seems that females get a positive boost from viewing, while males get negative effects (observe the opposing signs for gender coefficients in Table 14). Also, whites and Hispanics do not seem to benefit from viewing, while blacks (the heaviest viewers of all) seem to get a little boost from heavy viewing (see Figure 25a). These patterns of negative effects on those expected to feel more control (i.e., males and whites) and positive effects on those expected to be disempowered (i.e., females and minorities) suggest a possible mainstreaming pattern, that is, a cultivation of shared outlooks on life from television contents.

On the other hand, television viewing is negatively associated with mastery for some of those expected to feel less control, like younger adolescents (see Figure 24b). Observe the negative signs in the coefficients for 14 and 15 year olds, but the positive sign for 16 year olds (Table 14). Also the children of mothers with less than high school (the only significant negative coefficient) show a mastery loss from heavy viewing, while the children of more educated mothers seem to benefit from their heavy viewing.

And finally, those with poor/fair/good health status (32% of the sample) also seem to benefit less from their viewing in terms of mastery perceptions in comparison to the healthier ones. These three sub-groups show the opposite pattern: those with more social power are benefiting from viewing, while those usually disempowered in social stratifications show lower expectations of control associated with their heavy viewing patterns. These patterns provide partial support to a resonance effect from television content.

Table 14. Cross-sectional Regression of Mastery on TV viewing by sub-groups.

Sub-groups	2000 wave		2004 wave	
	Beta	t	Beta	t
Overall	-.005	.905	-.071	-1.825[†]
Age: 14 / 18	-.007	-.102	-.126	-1.742 [†]
Age: 15 / 19	-.021	-.369	-.072	-1.326
Age: 16 / 20	.036	.384	.185	1.447
Males	-.034	-.602	-.136	-2.208*
Females	.017	.306	-.065	-1.170
Whites	-.032	.569	-.065	-1.173
Blacks	.046	.538	-.118	-1.671 [†]
Hispanics	-.088	-1.093	-.010	-.130
Mother's Ed. < H.S.	-.211	-2.585*	-.064	-.789
Mother's Ed. = H.S.	-.042	.648	-.165	-2.661**
Mother's Ed. > H.S.	.076	1.181	.011	.173
Health: Fair/good	-.111	-1.602	-.105	-1.661 [†]
Health: Very good	.064	.937	-.061	-.941
Health: Excellent	.029	.411	-.056	-.676
R's Education: < H.S.			-.179	-2.261*
R's Education: = H.S.			-.046	-.863
R's Education: > H.S.			.042	-.444

Notes:

1) Standardized beta coefficients for the association between television viewing and mastery are reported with t-test coefficients for each sub-group.

2) Control factors include age, sex, race, mother's education, educational attainment (only 2004) and health status. Educational attainment: Low = less than HS; Mid = finished HS; High = more than 12 years of education. Individual's education is only used for the 2004 wave, because in 2000 education and age are practically indistinguishable.

3) † p < .10; * p < .050; ** p < .010; *** p < .001 (two-tailed t-tests).

It is important to clarify that the patterns observed in wave 1 do not support the general claim of the cultivation of powerlessness. However, the data from wave 1, supports the cultivation effect specified by the interaction with mother's education. Observe how the patterns in the coefficients point towards a resonance effect from television as a preferred explanation: privileged kids get some benefit from their exposure to television, while the less privileged draw negative cognitive consequences that are reflected in their appraisal of control.

The next section looks into the evolution of the contribution from television viewing on mastery for the same kids four years later, when they have become young adults and are already entering full-speed into adult roles and responsibilities, as students, workers, partners, and parents.

Cross-sectional Analysis: Wave 2

Wave 2 was collected four years after wave 1, in 2004, when the adolescents were young adults. There is evidence of an overall negative association between television viewing and mastery after controlling for six sociodemographic factors (Table 13). The regression coefficient for television viewing is marginally significant ($\beta = -.071$, $p = .068$). These results cannot be represented as providing full support for the first hypothesis. The cultivation of powerlessness (H1) is partially supported for the 2004 wave by a marginally significant coefficient, though it is important to mention that the television coefficient is greater than those for age, gender, and race in 2004.

The main predictors of mastery in 2000 were age, mother's education, and health status. By 2004, mother's education ceases to be a relevant predictor of mastery and the young adult's own educational attainment becomes the most important factor of mastery. Regression analysis entering the factors in consecutive steps shows that the effect of mother's education (indicator of socioeconomic status) on mastery 2004 is mediated through its effect on the young adult's educational attainment ($\beta=.184$, $p<.001$). Mother's education was entered in the first step of the equation ($\beta=.050$, $p<.202$). In the next step, respondent's education in 2004 is introduced in the equation, and the effect of mother's education is wiped out ($\beta = .004$, $p=.899$), while respondent's education is shown with a strong statistical effect.

Health status has an important contribution at both times, with equivalent effect size ($\beta=.171$, $p<.001$). Being a minority shows a small negative pattern on mastery in 2000. By 2004, the mastery deficits associated with minority status for Hispanics and blacks are obliterated in the overall analysis. The data shows that minority respondents evidence a larger gain in mastery than whites from time 1 to time 2. This pattern could be due to ceiling effect, and does not readily suggest an explanation. Furthermore, blacks, who show a significantly positive association between television viewing and mastery in wave 1 are the only ethnic group showing a marginal deficit associated with television viewing in wave 2. This reversal in the pattern of association for blacks is truly striking. The sub-group analysis below will try to make sense of these findings.

Sub-Group Differences

Cultivation research has frequently found varying effects within different sub-groups. In this case, there is an overall marginal negative effect of television viewing on mastery 2004. In the sub-group analysis, mostly those who are socially disadvantaged show a negative effect of television viewing on mastery (Table 15 above). That is, the younger respondents ($\beta = -.126, p < .10$), the children of mothers only educated until high school ($\beta = -.165, p < .01$), those with low educational attainment ($\beta = -.179, p < .05$), those with low health status ($\beta = -.105, p < .10$), blacks ($\beta = -.118, p < .10$), and high school dropouts in the sample ($\beta = -.179, p < .05$). Though most of the coefficients are small and not statistically significant in the full sample analysis for the 2004 wave, the pattern of television's effect is consistently negative in 2004 for at least one of the categories within each sub-group tested, generally the most vulnerable within the sub-group classification, (see table 13), in the direction predicted by the cultivation of powerlessness hypothesis (H1).

Curiously, males evidence a stronger negative relationship with viewing ($\beta = -.136, p < .05$) than do females ($\beta = -.065, p = .173$). In all sub-groups, even if the coefficients are not significant, the pattern is consistently negative, with few exceptions (see Tables 13 and 14, above).

Categorical analyses

Further analyses employ the classical cultivation distinction between light, medium, and heavy viewers to look for sub-group differences, focusing on the socially disempowered publics identified previously. In general it was found that sub-categories

generally identified as unprivileged are more likely to have negative associations between television viewing and mastery, while privileged adolescents were more likely to have neutral or positive associations between television viewing and mastery (as seen in Table 15).

Younger respondents (Figure 26a), who were 18 and 19 at the time of the interview, show deficits in mastery as television viewing is higher, while older respondents who were 20 years old, show a positive slope, though this interaction between television and age was not statistically significant ($F= 1.055$, $p = .378$). The interaction between gender and television was not confirmed ($F=2.163$, $p=.116$). In general, the difference in terms of mastery between males and females was not confirmed for either wave (Figure 26b).

Figure 26. Mastery in 2004 by TV viewing, compared by a) age and b) gender.

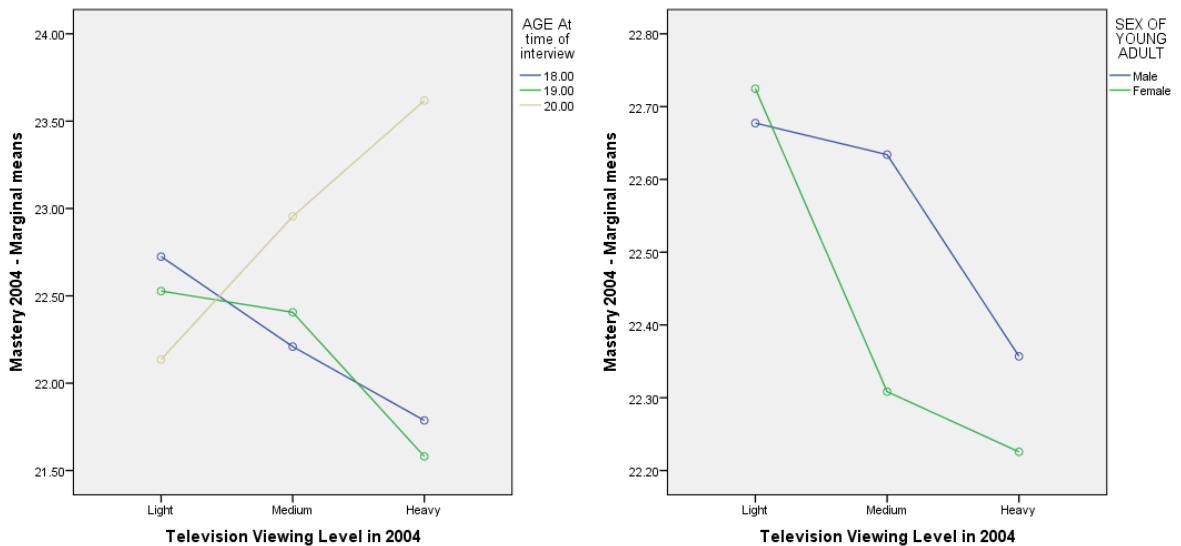
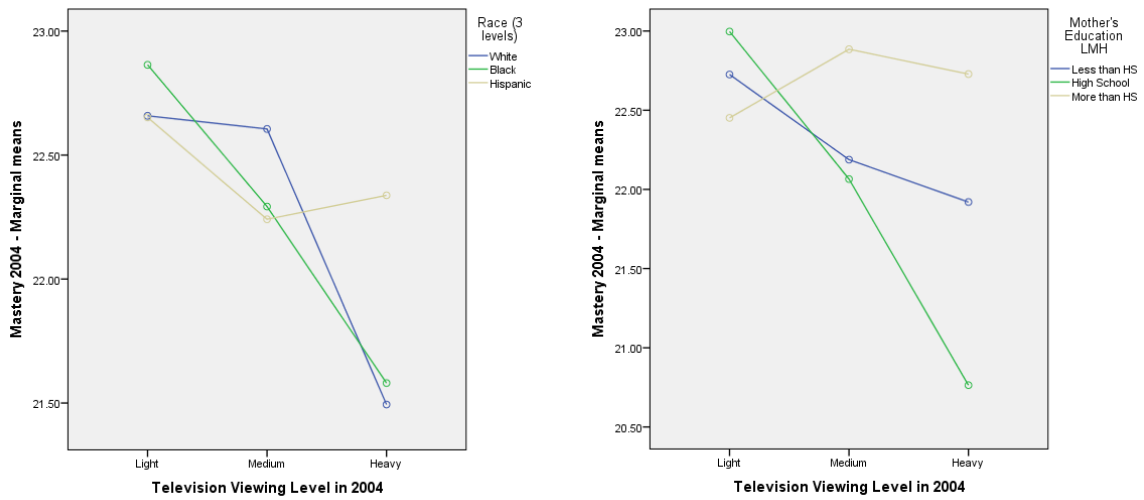


Figure 27. Mastery in 2004 by TV viewing, compared by a) ethnicity and b) mother's education.



In terms of ethnicity, there seems to be a homogenous behavior in the 2004 wave (see Figure 27a above). From light to heavy viewing overall the negative slope is marginally significant ($F=3.002$, $p=.05$). Whites and blacks have similar negative trends, while Hispanic heavy viewers report mastery levels almost equal to light viewers. The largest cultivation differential is for blacks ($\beta=-.118$, $p<.10$). The comparison by ethnicity does not support any specific pattern of mainstreaming or resonance within the cultivation hypothesis.

The interaction between television viewing and mother's education has relative support in the data for the 2004 wave. It is important to remember that this is the only indicator of socioeconomic level in the equation, and that respondent's education seems to carry the effect of this privilege into its association with mastery in wave 2. The categorical analysis (see Figure 27b above) shows that while those children of better educated mothers seem to avoid any negative effect from television viewing ($\beta=.011$),

the children from less educated mothers tend to show a clear cultivation of powerlessness. The interaction is marginally significant in ANOVA tests ($F=2.253$, $p=.62$). For wave 2, the children of mothers who finished high school report the strongest cultivation effect ($\beta=-.165$, $p<.01$), while the children of mothers who didn't finish high school report a negative association which is not statistically significant.

The insulating power of external privilege was observed in wave 1, evidenced in comparisons by ethnicity, gender, and socioeconomic level. The data from wave 2 gives minimal support to the resonance pattern. Males and whites do not seem to be that much resistant to the cultivation of powerlessness from their concurrent television viewing in 2004. The interaction with mother's education, however, partially supports the claim that television negatively cultivates a lower sense of control among heavy viewers (H1) and that this cultivation is moderated by social privilege.

The next question would be, What about the power and control that rests on the internal privilege symbolized by education and health status? Respondents' educational attainment and health status could be easily argued also to be products of class and social status, since the likelihood of educational achievements and better health in early adulthood are increased by the opportunities and protections afforded by parental socioeconomic level. However, there is an element of individual achievement in both of these indicators. Thus we will look into them keeping in mind that they represent internal resources rather than socially acquired advantages.

The data for wave 2 clearly show that the relevant sources of personal control for young adults are health and education. Respondents show that in their transition to

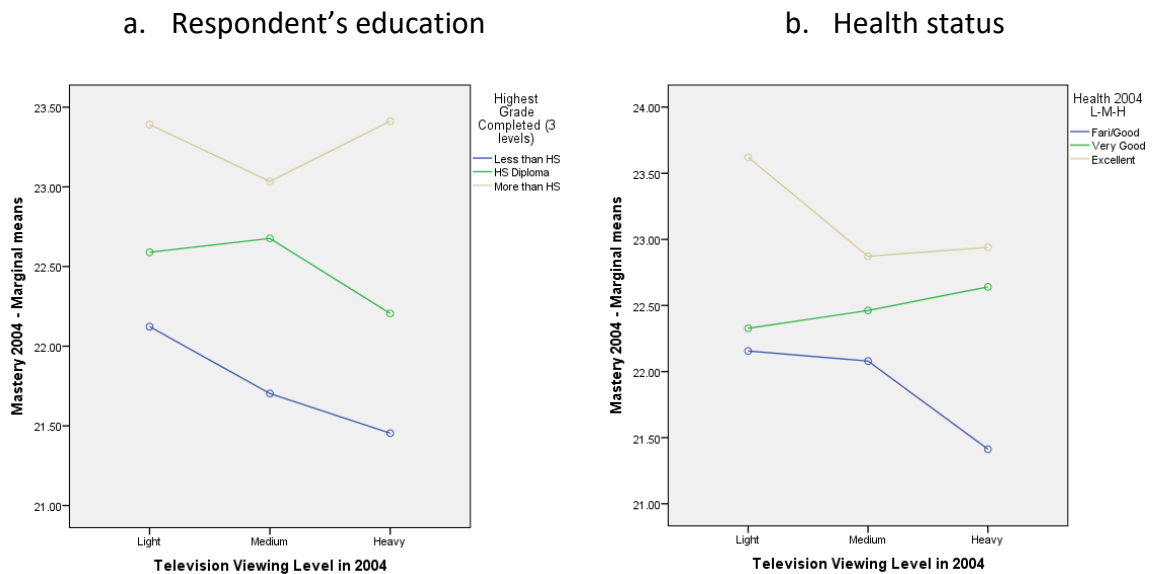
adulthood, control over problems and challenges of life (a.k.a. mastery) is understood as depending on internal resources (i.e., education and healthy bodies) more than on external or familiar resources. What is the role of television's stories in this stage of life? Is there evidence of television's cultivation of expectations of control that confirm or contradict the individual's personal experience of control?

The main effects of respondent's education and health status are the most important social factors of Mastery in wave 2, as shown in the overall regression analysis (Table 13). ANOVA including gender ($F=.208$, $p=.65$), education ($F=5.745$, $p=.003$), and health status ($F=5.285$, $p=.005$) confirms their statistical significance. The graphs of the two-way interactions (Figures 28a and 28b, below) suggest the large main effects of respondent's education and health status and the overall small negative effect of television viewing (see the slightly negative slopes even for the healthier and those with high school diploma). The test of two-way interactions of television viewing with education ($F=.259$, $p=.904$) and television viewing with health status ($F=.688$, $p=.601$) is not significant. However, the three-way interactions show very interesting patterns.

The three-way interaction of television viewing and education compared by gender is statistically significant ($F=2.516$, $p<.05$) and suggests a pattern of resonance in which the actual difference in mastery and social power associated with educational opportunities and gender is augmented by large doses of television viewing (see Figure 29). Higher educational attainment seems to give more mastery to males than to females, and it apparently insulates more educated males and females from the cultivation of powerlessness. Observe the almost flat slope for those with education

beyond high school. Not having a high school diploma is terrible for mastery: both males and females in this group show the lowest mastery. On top of that, low educated females evidence a statistically significant negative association with increased television viewing.

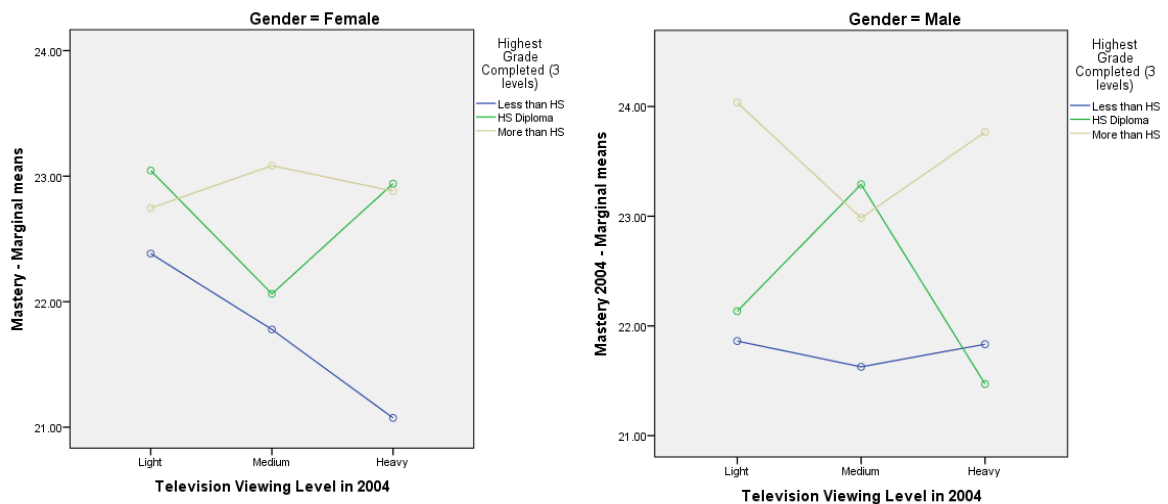
Figure 28. Mastery in 2004 by TV viewing, compared by R's education and health status.



On one end, the group of males with highest educational attainment and low television consumption report the highest level of mastery. On the opposite end, the group of females with lowest educational attainment and heavy television viewing show the lowest level of mastery in the sample. The interaction between gender and education is not statistically significant ($F=1.394$, $p=.249$). The significant three-way interaction means that on top of the accumulation of disadvantages experienced by low educated females, a heavy dose of television viewing appears strongly associated with a

precarious sense of control. These findings exemplify precisely the definition of resonance in cultivation theory: people who already experience disparate conditions of life learn from their television exposure to exaggerate the meaning or the consequences of such dire conditions.

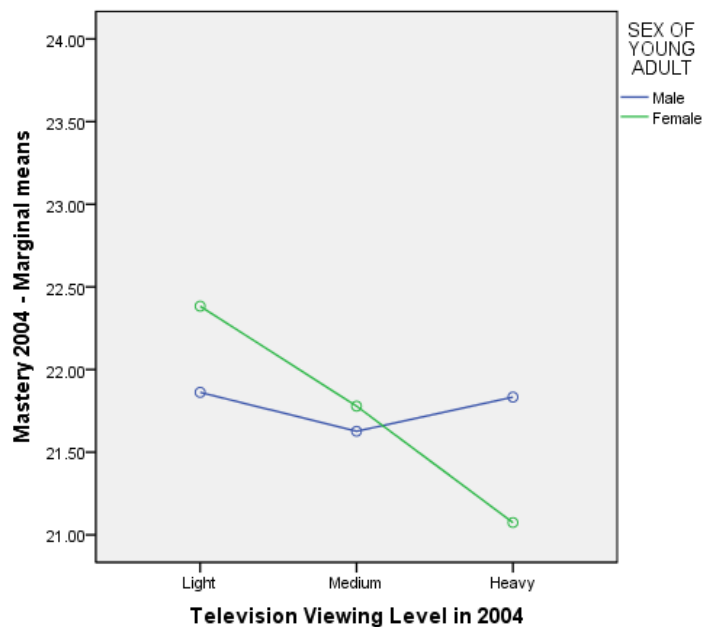
Figure 29. Three-way Interaction of Mastery 2004 on TV viewing 2000, R's education and Gender.



Observe how, in the case of females (Figure 29a, above), the two slopes that represent “more than high school” and “less than high school” diverge considerably among heavy viewers. For light viewing females, their difference in educational attainment does not seem to represent a significant difference in terms of mastery. But for heavy viewers, the difference is quite considerable. On the other hand, the difference in mastery for males is significant independently of their viewing habits. These patterns suggest that heavy viewing takes a different toll on females than on males. What is it about television’s representations and portrayals that lead females to

judge themselves less masterful in life? Observe the crossing lines in the graph of Figure 30. Males with less than high school report about the same level of mastery independent of their viewing level, while females' mastery is clearly sensitive to the amount of viewing. Or probably the causality is reversed, and females who experience powerlessness from their limited education tend to increase their television viewing in 2004 (both factors are concurrent in 2004).

Figure 30. Mastery 2004 on TV viewing 2004 among R's with 'less than H.S.', compared by gender.



Cross-sectional analysis: Conclusions

From the cross-sectional results, there remains something to say about the opposite trends observed in the association between television viewing and mastery in wave 1 and wave 2. An explanation for these contradictory patterns of association could be that during adolescence, kids use television for self-socialization purposes (Arnett,

1995). Respondents in the sample were 14, 15, and 16 years old in 2000. Through television, adolescents can increase their knowledge about the real world (i.e., the world of adults, of love, sex, work, law and politics). The more they watch, the more familiar they become with the languages, symbols, and codes that apply in adult situations. This might contribute to their sense of control because they can understand the situations of the adults around them. At this point in their lives, this information about the real world might be distorted, but it does not matter, since most of them are probably not dealing with those situations by themselves. The young kid who talks among his peers about the problems and situations of adult life as if he knew what they are about might see his or her reputation improved and enjoy a temporarily increased sense of control.

By the time adolescents become young adults (18-20 years old), which is when they were interviewed for the second wave, television is not such a great source of information about the mysteries of adulthood. At the beginning of adult life, mastery will not be increased by vicarious learning but dominantly by personal experiences of control. This claim is supported in the data by the increased relevance of personal educational attainment on top of any other factor. Television's easy solutions and fantasy world might actually be teaching lessons about powerlessness to the young adult who is expected to cope with actual problems of adult life. Or by portraying superior role models with exaggerated virtues and skills, television might lead average young adults to misjudge their own skills and abilities and thus feel disempowered and unlucky. Additionally, time spent in front of the television is taken away from actual

explorations into the real world (e.g., study, work, relationships) which are the main sources of mastery.

Most cultivation studies have employed cross-sectional tests to establish a relationship between television consumption and cognitions about reality. Cultivation research has been criticized over the years for not providing evidence on all the criteria for causality, particularly on time order. Gerbner and his colleagues argued that cultivation is not necessarily a causal model, and that most associations between television viewing and social assumptions and beliefs could be construed as reciprocal relations which strengthen the role of television as the central source of cultural references in current western society. The next section discusses the longitudinal analysis of this panel sample, which provides an interesting insight into the power of television to shape young people's life expectations and outcome evaluations.

CHAPTER 6

RESULTS FROM LONGITUDINAL ANALYSIS

Introduction

The cultivation of powerlessness hypothesis, the main thesis of this study (H1), predicts that, longitudinally, television viewing at time 1 would negatively predict mastery at time 2. If supported, the longitudinal hypothesis would provide evidence for the causal relationship of television viewing on cognitive deficits of control, at the specific level, and for cultivation theory at the general level.

In order to support H1, the longitudinal test should meet the four criteria mentioned earlier to establish causality in cultivation: correlation, time-order, consistent with TV content, and non-spuriousness. Correlation and time order would be met with a statistically significant regression coefficient for mastery in 2004 on television viewing from 2000. The direction of the association must be negative, since that is the argument from TV content that this study has constructed. And the test of non-spuriousness would be met if such coefficient remains statistically significant after controlling for mastery in 2000 and other logical predictors of mastery and television viewing like gender, age, ethnicity, education, mother's education, and health status.

Critics of cultivation research have employed perceived control as a predictor of television viewing, which is an assumption that runs against the premises of this study. This reverse-causality assumption will be tested with hypothesis 2, which predicts that

mastery at time 1 will negatively predict television viewing at time 2 after controlling for television viewing at time 1 and other socio-demographic factors.

The cultivation approach on which this study is based does not necessarily rule out this alternative explanation. Cultivation considers television an agent within a cultural system that reinforces cultural facts and commonly held assumptions about reality. Cultivation does not see television as the origin of all cultural beliefs, but an agent of stabilization and cultural homogenization. Accordingly, if a low level of Mastery at time 1 is found to *cause* an increase in television viewing at time 2, this could be interpreted as evidence of the effectiveness of the social control function of television. We could argue that television directs people's frustration with poor life results and lack of personal control away from radical solutions that threaten the social system, and instead neutralizes such frustration through entertainment, which commonly reinforces the assumption that outcomes are people's own doing and not produced by an unfair system.

Also, if the data fit a reciprocal association model, the cultivation hypothesis would not be undermined. On the contrary, it would be strongly supported. It has been argued from the start that cultivation theory proposes a reciprocal relationship between television and cultural assumptions. It is not a unidirectional hypothesis of causation, but a mutually reinforcing cycle of messages and responses. As Shanahan and Morgan (1999) have argued, "Cultivation means long-term patterns of stability among systems of cultural images and practices, lifestyles and belief structures. People are born into a symbolic environment with television as its mainstream" (p. 34).

Longitudinal Regression Analysis

The longitudinal relationships were tested using linear regression models (see Table 16). The analysis found statistical support for hypothesis 1: television viewing in 2000 was found to be a significant predictor of mastery in 2004 after controlling for mastery in 2000 and five socio-demographical factors (age, sex, race, mother's education, and health status).

Table 15. Longitudinal reciprocal analysis of TV viewing and Mastery.

Factors	Mastery 2004		Television 2004	
	Beta	t	Beta	t
Age	.016	.440	.025	.662
Sex	-.002	-.060	-.050	-1.334
Race (Black)	.034	.835	.150	3.663***
Race (Hispanic)	.055	1.373	.017	.413
Mother's Education	.025	.649	-.015	-.394
Health Status 2000	.111	2.924**	.008	.205
Mastery 2000	.243	6.362***	-.043	-1.121
Television Viewing	-.096	-2.490*	.223	5.762***

Notes: Standardized regression coefficients (beta) and t values are reported.

† p < .10; * p < .050; ** p < .010; *** p < .001 (two-tailed test).

Independent variables are applied longitudinally (i.e., TV viewing 2000 to test Mastery 2004, and Mastery 2000 to test TV viewing in 2004). Respondent's education in 2000 was not included since it is the same as Age. All control factors from 2000 were applied.

Regression Method: Enter. Model's R²: Mastery 2004: .096, TV viewing 2004: .092;

Durbin-Watson statistic: Mastery 2004: 1.984, TV viewing 2004: 2.001.

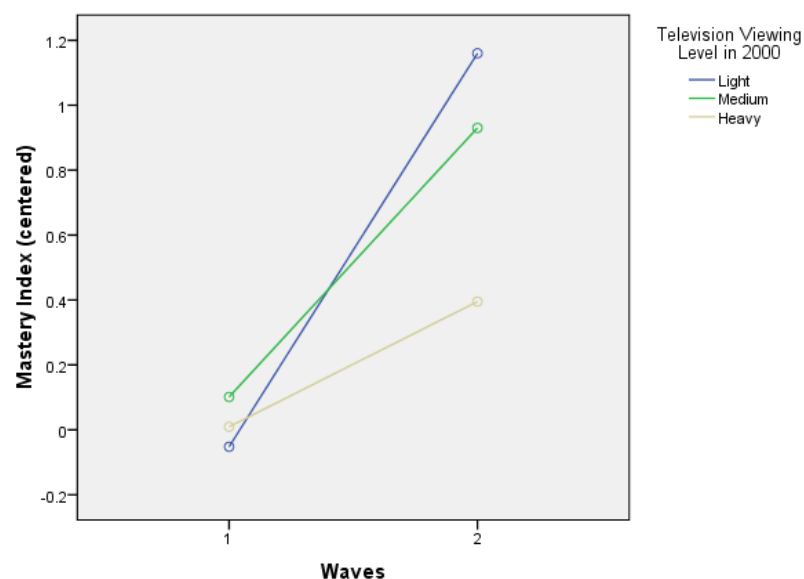
Interaction terms for TV with all factors were introduced using Remove.

The best predictors of mastery in 2004 were earlier mastery ($\beta = .243$) and health status ($\beta = .111$). The size of television's effect, observed in the standardized regression

coefficient ($\beta = -.096$, $p = .013$), is consistent with the typical finding of dozens of cultivation studies and meta-analyses (Morgan & Shanahan, 1999). It is a relatively small though statistically significant and consistent effect from television viewing.

Figure 31 (below) shows the trajectories of mastery gain between time 1 and time 2 by level of television viewing. Results from an analysis of variance with repeated measures without control factors shows that at time 1 the average mastery does not differ by viewing level ($F = .285$, $p = .752$), but four years later the effect of viewing (or of the social conditions that foster heavy viewing) is evident on the sense of mastery ($F = 3.62$, $p < .05$). Over time, light viewers have the largest gain in mastery and heavy viewers have the lowest gain, which is only marginally significant (Table 16, below). In the 2004 wave, post-hoc analysis indicates that the differences become statistically significant between light and heavy viewers ($F = 3.620$, $p < .05$).

Figure 31. Longitudinal mastery trajectories by TV viewing level.



More important than comparing the differences in mastery in 2004, is to analyze how television viewing can influence the change over time of a cognitive belief that normally shows a significant development during the transition period of the last years of adolescence. This longitudinal analysis suggests that habitual heavy television viewing during the mid and late adolescent years might be hindering the development of the sense of mastery. While light and medium viewers are acquiring a healthy sense of mastery that nurtures their sense of control over life outcomes, improving their mastery score 5% on average, heavy viewers remain stagnant, improving close to 2.5%, and report, at twenty years old, mastery scores that are similar to those they had four years earlier, a time in which they had very little actual control over life outcomes (Table 16 below).

Table 16. Longitudinal mastery gains by TV viewing level (2000).

Level of viewing	N	Mastery 2000	Mastery 2004	Diff	t
Light viewers	204	21.446	22.662	1.210	4.895***
Medium viewers	299	21.511	22.358	.847	4.089***
Heavy viewers	160	21.287	21.818	.531	1.719†
	F	.285	3.620*		

Note: Paired-samples t-tests are reported for the longitudinal comparison; ANOVA test reported for the comparisons among viewing levels; † $p < .10$; * $p < .050$; ** $p < .010$; *** $p < .001$ (two-tailed test).

It is important to remember that mastery is not an attitude as a preference or an agreement with an idea, but a cognitive belief. That is, it reflects the accumulated perceptions of how the individual has coped with problems and challenges in life. In that

way, mastery is a subtle reflection of how the individual perceives how the world is, how it works, and how much control he or she has in it.

The overall analysis does not support the reverse-causality hypothesis (H2), which posits that earlier mastery predicts later television viewing level, based on the idea that television viewing is a symptomatic activity, a strategy for information seeking, mood management, or simply a mindless leisure activity. Proposed originally by the uses and gratifications theorists, this approach removes all power from the television messages since they are used by the audience for their own specific purposes. The explanation goes something like this: If the individual feels low mastery, most likely he will avoid risky situations (e.g., social encounters) and will prefer to stay in the safety of his home, watching television.

Mastery in 2000 was not associated with television viewing in 2004 for the sample as a whole ($\beta = -.043$, $t = -1.121$, $p = .263$). The main longitudinal predictors of television viewing in 2004 were ethnicity—specifically, being black was related to a greater amount of viewing ($\beta = .150$, $p < .001$), while being white was related to the lowest amount of viewing ($\beta = -.139$, $p < .001$)—and the individual's previous level of television viewing in 2000 ($\beta = .223$, $p < .001$). All other control factors and interaction terms were found insignificant.

Thus the reciprocal relationship is not supported straight away. The overall analysis supports only the cultivation of powerlessness hypothesis (H1) and rejects the reverse causality hypothesis (H2).

A note of caution should be included here. As suggested in the cross-sectional analysis, mastery is at its lowest around 14 years of age. Mastery at 14 might not be a reliable predictor of attitudes or behaviors in later life. Perhaps mastery at age 21, when the construct is more likely to have crystallized, would be a better predictor of television viewing in later life. We have asserted that mastery is not a fixed trait, but a cognitive belief in continuous revision, which undergoes several transformations over the life course. The current study sheds some light over the way television contributes to the formation of mastery beliefs in late adolescence and early adulthood. But this cannot be enough to affirm long-lasting effects or to rule out any reciprocal association between these concepts in later life.

Longitudinal patterns: Analysis with control factors from 2004

Control factors from 2004 (i.e., respondent's education and health status) were introduced in the regression equation to make a more stringent test of the longitudinal effect of television viewing as an independent variable. The cross-sectional analysis had found mastery 2004 strongly associated with respondent's educational attainment and health status, and only marginally related to concurrent television viewing. Education and health status represent the newest information about the individual progress and achievements of these young adults. As suggested before, these two factors synthesize the individual's experiences of success and failure in two extremely relevant dimensions of personal control. Personal results in school and physically are two of the most important sources of mastery in early adulthood. The measure of mastery 2004 can

confidently be assumed to be a reliable reflection of the individual's performance in education and health status, among others.

Testing the equation with 2004 controls allows us to see if television's effects at the cognitive level are short-lived or long-lasting. That is, if the significant effect of television viewing 2000 on mastery 2004 was actually an indirect effect, better explained by more recent events and beliefs, then the longitudinal association should disappear after the introduction of updated correlates of mastery. Thus if the longitudinal cultivation effect is not reduced by the introduction of 2004 controls, it would suggest that television's impact on the personal sense of control is not at an anecdotal level, in which accumulation of impressive and vivid stories from the media cause short-term ups or downs in mastery. Instead, it would suggest that television has cultivated in its heavy viewers narrative models that interpret reality for them. This cultivation effect goes beyond ontological beliefs, beyond estimations and perceptions of what reality is. Television would be cultivating interpretive models, profound associations, and implicit explanations of how the world works, that control is desirable, and what constitutes control in this a world.

Observe the differences in the regression coefficients between steps (Table 17). By 2004 all the stable markers of social status and age, gender, ethnicity and mother's education have lost their direct association with mastery. Mastery 2000 represents the best predictor of mastery 2004 ($\beta=.242$, $p<.001$), followed by health status ($\beta=.110$, $p<.01$) and television viewing in 2000 ($\beta=-.096$, $p<.05$). In step 2 of the regression, education and health status from 2004 are introduced into the equation. They bring an

increase in the explanatory capability of the model (change in R^2 from .095 to .138). They represent new information for the evaluation of mastery that was not accounted for by the 2000 data. We could speculate that these two indicators attempt to make explicit the effect of the individual's internal resources on her mastery estimations.

The new variables also have great redundancy with their wave 1 correlates. Observe how the coefficients of all those significant factors of mastery 2000 (age, mother's education, health status) and the coefficient for mastery 2000 move in the negative direction by around .030 and 0.50 in step 2. Except for health status 2000, none of them were significant factors of mastery 2004, and their change passes under the radar. But the pattern is remarkable. We can spell out the mastery narrative of wave 1. Control over life problems is for those who are older, male, white, healthy, and from a wealthy family. This is evidently an immature worldview. As if these children went around at fifteen old telling other kids, "I am better than you because my mother is better than yours!" All the significant factors of the 2000 wave were externally imposed, given by nature, relatively unchangeable. By 2004, all these external indicators of social stratification become irrelevant for the equation and are replaced by education and health, two factors with almost equal strength of association.

The patterns of association from wave 2 suggest a new narrative of self-reliance. These young adults' mastery is built on their personal achievements, summarized here in education and health status: how much I have studied and how well I keep myself in shape. The coefficients for mastery 2000 ($\beta=.212$, $p<.001$) and health status 2000 ($\beta=.053$, $p=.172$) are greatly reduced. Actually health status 2000 is no longer a

significant factor of mastery 2004, but health status 2004 is ($\beta=.138$, $p<.001$). The updated factors are better correlates of mastery than the four-year old information. It is as if these kids had suddenly discovered that they are not the product of a set of social institutions and conventions (step 1), but they have built themselves up through personal effort (step 2). But see how the coefficients for gender and age cross into the negative. From here on, being older contributes negatively to mastery and being a female will start being associated with a lower sense of control.

The sense of control at the dawn of adult life is described here as mostly dependent on three different sources of information: previous mastery, personal achievements, and television viewing.

First, mastery 2000 is seen here as a variable that summarizes the individual's own interpretation of all previous life history. A high sense of mastery is like wealth, like money in the bank. The best inheritance that a family or society can bestow upon their children is a healthy sense of mastery. When people are broke in this dimension, it is even harder to recover than real money. Mastery 2000 accounts for 6.6% of the variance of mastery 2004. The autocorrelation of mastery over time might look relatively small ($r=.256$), but it is important to point out that we are gauging mastery during a time of change, so the correlation is bound to be small. Also, if we divide the mastery scores into three levels around the median, we can check for measurement error using the median as a cut-point (Median_{wave 1} = 21; Median_{wave 2} = 22). Out of those who scored lower than the median in wave 1, 54% remained in the lower bracket, and 46% moved to a higher bracket by wave 2. And out of those who scored higher than

the median in wave 1, 54% remained higher and 46% moved to a lower bracket by wave 2. That is, roughly the same amount of subjects moved either up or down in the scale. This relatively wide measurement error also explains the observed low autocorrelation.

Second, mastery in 2004 is greatly informed by two indicators of how well the individual is doing in his pursuit for control. When educational attainment and health status from 2004 enter the equation (step 2), they account for an additional 4% of variance. These represent the most recent information about their outcomes in dealing with daily problems.

Third, television viewing from 2000 accounts for almost 1% of the variance in mastery 2004. The size of the effect might look small, but with a seven-factor model that accounts for only 14% of the variance in mastery 2004, television viewing stands out among other regular social practices and conventions for its long-lasting effect on personal assessments of mastery.

When the 2004 factors enter the equation, television viewing stands next to mastery as the only factors from 2000 with a significant impact on mastery 2004. Furthermore, the coefficient for television viewing is practically unchanged ($\beta = -.095$, $p = .012$) from step 1 to step 2. Newer performance in very relevant dimensions of mastery do not explain away any of the association of television and mastery. Remember that this association in 2000 was close to zero. Four years later it is already .095.

Cultivation researchers could speculate that it will keep growing or at least will remain stable for many years. Television has stopped providing relevant facts which

made the fourteen and fifteen-year-old heavy viewers feel higher levels of mastery and act knowledgeable about the world among their peers. Instead, television has cultivated a worldview among the heavy viewers, a set of principles, standards, and evaluation categories.

Table 17. Longitudinal relationship between TV viewing 2000 and Mastery 2004, with 2004 controls.

Factors	Step 1		Step 2	
	Beta	t	Beta	t
Age	.017	.443	-.013	-.338
Sex	-.002	-.044	-.010	-.271
Race (Black)	.034	.821	.036	.907
Race (Hispanic)	.054	1.356	.064	1.611
Mother's Education	.024	.643	-.010	-.273
Health Status 2000	.110	2.907**	.053	1.369
Mastery 2000	.242	6.335***	.212	5.590***
TV Viewing 2000	-.096	-2.501*	-.095	-2.510*
R's Education 2004			.153	3.854***
Health status 2004			.138	3.491***
Interaction terms				
TV x Health 2004			.341	2.011*

Notes: Standardized regression coefficients (beta) and t values are reported.

† p < .10; * p < .050; ** p < .010; *** p < .001 (two-tailed test).

Independent variables are applied longitudinally (i.e., TV viewing 2000 to test Mastery 2004, and Mastery 2000 to test TV viewing in 2004). Respondent's education in 2000 was not included since it is the same as Age. All control factors from 2000 were applied in step 1, and control factors from 2004 introduced in step 2.

Regression Method: Enter. Model's R² Step 1: .095; Step 2: .138.

Durbin-Watson statistic: Mastery 2004: 2.059

Interaction terms for TV with all factors were introduced using Remove.

The lingering effect of television viewing from their teenage years is not in conflict with the new facts that individuals learn every day as they strive for control. It lingers because it has become their worldview. Television's storied nature allows it to become our consciousness, the grid we use to classify and interpret new facts. New facts are not *compared* to television's stories; new facts are understood through television stories.

Cultivation is a subtle association, but a deep and pernicious one. It is remarkable that the cultivation effect lingers after four years with a stronger association than in the cross-sectional examinations. The non-disappearance of the television link could be interpreted as revealing a deep-seated notion, acquired in early life, which becomes a pattern or method of control estimation in later life. This would mean that television not only cultivated a set of beliefs through endless repetition of distortions of reality, but also that television taught its viewers detailed patterns of thinking and judging for control situations.

The persistence of the longitudinal association of TV and mastery suggests that television viewing is not only a symptom of objective conditions of powerlessness, but a social condition that acts as a force for social control. Critics of cultivation would say that heavy television viewing is popular among the disempowered due to easy access. In this view, heavy viewing is only a symptom of objective conditions of powerlessness, and its correlation with mastery is not causal but spurious. The fact that the correlation

lasts four years and resists the introduction of newer information signals a deeper effect that is quite evident from the data.

The non-spuriousness of the cultivation of powerlessness

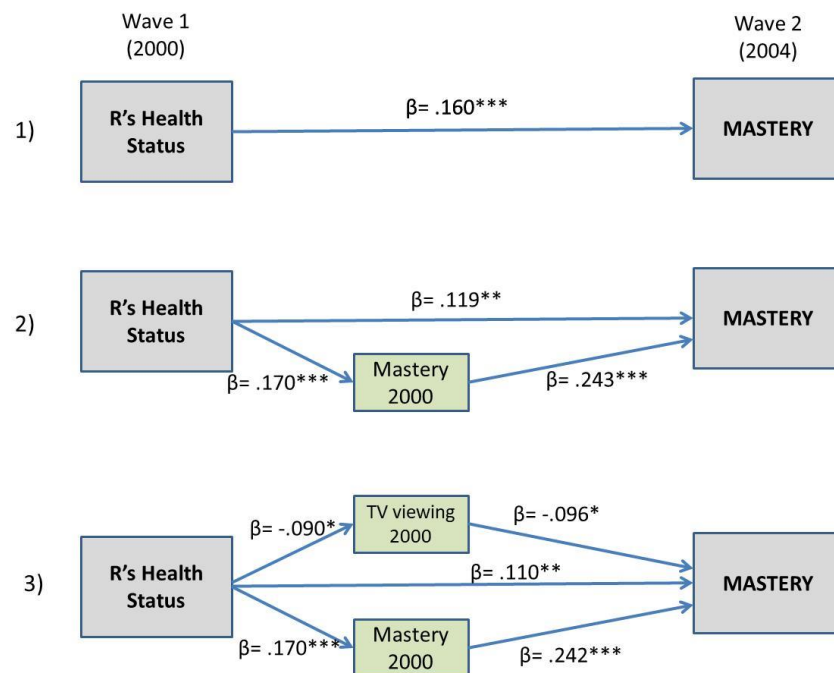
An excellent example of the cultivation of powerlessness at work is observed in the statistical links among health status, television viewing, and mastery. Health status is empirically associated with television viewing since people who feel unhealthy will often watch more television than the average viewer. Also people with deteriorated health will perceive lower mastery in general. These empirical associations are supported for both waves. The case of health status will help clarify the real association between television and mastery. The test of the regression model with 2004 factors provides support for the non-spuriousness of the cultivation effect.

Figure 32 below describes a regression model with wave 1 factors. Health status 2000 shows a remarkable longitudinal association with mastery 2004 ($\beta=.160$, $p<.001$), but when mastery and TV viewing from 2000 are introduced into the equation (Table 17), the longitudinal association between health and mastery is importantly reduced ($\beta=.110$, $p<.001$). Evidently there are indirect effects of health status 2000 on mastery 2004 mediated by TV viewing and mastery 2000.

When control factors from 2004 are introduced (Figure 33), the coefficient for health status 2000 is reduced out of statistical significance ($\beta=.054$, $p=.172$). Its effect is explained away by newer information contained in the factors of education and health 2004. The direct effect of health status 2000 on mastery 2004 was found to be spurious.

The introduction of updated indicators reduces also the longitudinal association with mastery 2000 ($\beta=.213$, $p<.001$), but the television 2000 coefficient is unaffected. This provides statistical support to the non-spuriousness claim of the cultivation hypothesis.

Figure 32. Longitudinal example of the Cultivation of Powerlessness Hypothesis.



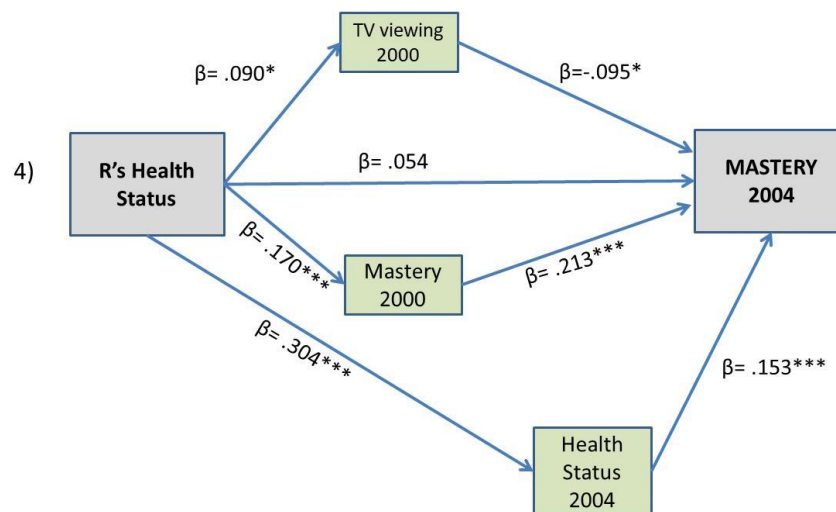
Notes: Regression coefficients from an equation that includes control factors from 2000: age, gender, ethnicity, and mother's education. Reported coefficients come from regression successive steps.

Even after controlling for eight factors the independent longitudinal contribution of television viewing to mastery remains significant and unaltered ($\beta=-.095$, $p=.012$).

Interestingly, the interaction term of the association between TV viewing 2000 and Health Status 2004 was the only interaction term to score a significant coefficient ($\beta=.341$, $p<.05$) in the longitudinal regression analysis (Table 17). Apart from the direct

effect of current health status 2004, television viewing from mid adolescence (four years earlier) evidences a significant power to organize the viewer's interpretation of their actual wellbeing as they enter adulthood. This is striking. Television's narratives manage to establish a very complex relationship with reality. The outcome of a real life indicator such as health status on the estimation of personal control is significantly moderated by the contribution of four years before.

Figure 33. Longitudinal mechanism of the Cultivation of Powerlessness Hypothesis (With controls from 2004.)



The retardation effect of television viewing.

The most important finding of this project might be the retardation effect of heavy television viewing. This retardation's obvious symptom is the significantly low mastery gain of heavy viewers across time. But the comparison of the regression equation by viewing level (see Table 18, below) reveals that the effect of increased

television viewing is a retardation of maturation at the level of worldview. It is ideology of control in the real world which is being cultivated.

As previously discussed, respondents' mastery level at mid-adolescence was mainly influenced by external attributes (age, race, gender, parent's socioeconomic level). At time 2, respondents' mastery was found to be increasingly determined by internal resources like educational attainment.

Table 18. The Retardation Effect of Television Viewing.

Factors	Light		Medium		Heavy	
	β	t	β	t	β	t
Age	-.018	-.256	.011	.191	-.083	-1.105
Gender	-.024	-.340	.024	.436	-.095	-1.282
Race (Black)	-.077	-1.039	.181	3.140**	-.125	-1.526
Race (Hispanic)	.046	.641	.115	1.968*	-.053	-.648
Mother's education	-.015	-.208	-.035	-.620	.058	.742
Health 2000	.030	.423	.039	.683	.107	1.314
Mastery 2000	.219	3.083**	.227	4.090***	.170	2.099*
Education 2004	.191	2.560*	.133	2.237*	.135	1.737†
Health 2004	.023	.316	.156	2.660**	.241	3.018***
F=4.567*						
Model's R²	.117	F= 2.835**	.159	F=6.094***	.215	**

Notes:

Regressions of Mastery 2004 on all Control Factors from 2000, with education and health status from 2004, compared by Television Viewing Levels of 2000.

Only standardized regression coefficients (beta) and t values are reported.

† p < .10; * p < .050; ** p < .010; *** p < .001 (two-tailed test).

Compare the patterns of association of all coefficients for light and heavy viewers (Table 18, above). The effect of television viewing seems to be the retardation of the shift in importance between external and internal factors for the evaluation of personal mastery.

For light viewers the most important factor of mastery is education ($\beta=.191$, $p<.05$), while health status ($\beta=.023$, $p=.725$) is irrelevant, and mastery's high autocorrelation can be interpreted as a symptom of stability ($\beta=.219$, $p<.01$). But for heavy viewers the external factors remain relatively important. Age, gender, ethnicity, and mother's education might not be statistically significant, but their coefficients are moving away from zero in patterns that are mostly negative to mastery. For instance, being a female, black, or of a low socioeconomic status are more negative for mastery among heavy viewers than among light viewers. At the same time, personal education, the main symbol of independence and control in the adult world, appears only marginally significant among heavy viewers ($\beta=.135$, $p=.85$). Health status in 2004 becomes the most important source of mastery ($\beta=.241$, $p<.001$) for heavy viewers.

The retardation effect means that heavy viewers evaluate mastery at twenty as if they were still fifteen, as if their ability to control life risks were based on their capacity to beat others in a sprint race or a street fight. Moreover, for these heavy viewers age is turning into a curse. Compare the increasingly negative coefficient for age ($\beta=-.083$, $p=.271$). Older age had a very positive association with mastery in wave 1, but in 2004 its contribution turns negative for heavy viewers. For these heavy viewers, good times are in the past, when they were young and strong. That is when they felt powerful. Now

they are getting old—and they are only twenty! The most important source of mastery is their physical sensation of health ($\beta=.241$, $p<.001$), and past mastery is a less reliable predictor of present mastery ($\beta=.170$, $p<.05$).

Light viewers appear more mature, focused on education instead of physical ability, and they are also more difficult to pin down. The models' R^2 vary greatly between light and heavy viewers. Light viewers apparently draw their estimations of control from a large variety of factors, and the current model is not rich enough to pin them down ($R^2=.117$). From this model we can observe that light viewers rely more on internal resources and less on external labels and traditional sources of social power such as gender, race, and socioeconomic background. On the other hand, heavy viewers' R^2 is almost double ($R^2=.215$) that of light viewers. The traditional factors of social control explain a great deal more of their mastery. The sources of heavy viewers' mastery are reduced to a limited number of conditions, externally stereotyped, and mostly uncontrollable for them. This is what the cultivation of powerlessness means: television's long-lasting effect lies in its power to control the set of criteria that inform people's sense of mastery.

Retardation patterns by sub-groups

Cultivation research has often found that television viewing has different patterns of association among different publics. Across different groups, the effect can be one of homogenization (a mainstreaming effect), where socially divergent groups tend to adopt similar worldviews and expectations due to their sharing of heavy

television viewing habits, or it can be that heavy viewers of different groups may diverge even more than light viewers because television's content reinforces their lived experiences, creating a resonance chamber. Both in the case of resonance or mainstreaming, the supporting test is a significant two-way interaction of television viewing and one of the socio-demographic controls. The difference between these two patterns is that mainstreaming will be evidenced by convergence, while resonance will look like divergence among heavy viewers.

In this study, the overall longitudinal regression analysis (Table 18) only found a significant effect for the interaction between TV viewing and health status in 2004 ($\beta=.341$, $p<.01$). We have established above that the cultivation effect implied by this interaction operates directing the attention of the individual towards health status as the main source of mastery and away from other available sources of personal control like education.

In the following analyses, we look into possible patterns of mainstreaming and/or resonance. To test for these cultivation patterns both hypotheses were compared by sub-groups. Mastery 2004 was regressed on television viewing from 2000, and TV viewing 2004 was regressed on mastery 2000 for each sub-group. Only coefficients for the hypothesized relationships are reported, comparing between sub-groups while keeping all control factors from 2000 and 2004 in the equation (see Table 19 below).

Results do not confirm a reciprocal relationship between television and mastery even among sub-groups. While the cultivation of powerlessness hypothesis (H1) is

supported in at least one sub-group within each category, often showing coefficients that are larger than the overall association, on the reverse causality column, only one of the sub-groups provides some support for H2.

Table 19. Longitudinal reciprocal relationship compared by sub-groups.

Sub-group	Categories	TV 2000 → Mastery 2004	Mastery 2000 → TV 2004
	Overall	-.099**	-.024
Gender	Males	-.028	-.015
	Females	-.171***	-.041
Ethnicity	Whites	-.043	.000
	Blacks	-.144*	.011
	Hispanics	-.137†	-.137
Mother's education	Less than H.S.	-.210**	-.110
	H.S. Diploma	-.056	-.017
	More than H.S.	-.108†	-.002
Respondent's Education in 2004	Less than H.S.	-.093	-.110
	H.S. diploma	-.087†	-.016
	More than H.S.	-.164†	-.113
Health status 2004	Fair/Good	-.167**	.033
	Very good	-.113†	-.108†
	Excellent	.007	.000

Notes: Only standardized regression coefficients (β) for the association between television viewing and mastery are reported. Control factors include age, sex, race, mother's education, mastery 2000, educational attainment by 2004 and health status in 2004.

† $p < .10$; * $p < .050$; ** $p < .010$; *** $p < .001$ (two-tailed t-tests).

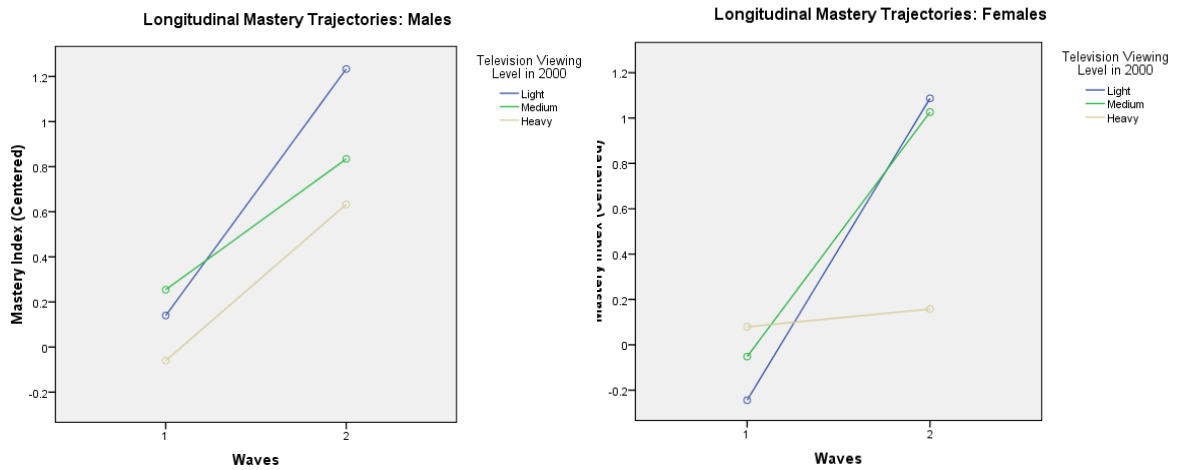
Having only one marginally significant coefficient out of fourteen tests seems more an instance of type 1 error than a relevant evidence of reverse causality.

Television viewing in 2000 has stronger predictive power on mastery in 2004 among the publics that cultivation theory considers vulnerable and socially disempowered. In general, the observation is that heavy television viewing seems to increase the sensitivity of vulnerable publics to their membership in a social condition of powerlessness. TV focuses our attention on our powerlessness and distracts us from other internal sources of personal control. The only factor that evidences the opposite pattern is respondents' education. These patterns will be analyzed below.

Gender

Figure 34 show the patterns of the cultivation of powerlessness hypothesis: heavy viewers tend to have smaller mastery gains over time. For males, the differences in 2004 are not statistically significant. The trajectories however seem to grow apart over time, with light viewers improving in mastery while heavy viewers lag behind. For females, the difference between light and heavy viewers is statistically significant in 2004. While light ($n=117$) and medium ($n=154$) viewers evidence a similar gain in their mastery, the female heavy viewers ($n=66$) go from having the highest average in 2000 to having almost no gain four years later. The patterns observed in the sub-group analysis supports the retardation effect from heavy television viewing for females in this sample ($\beta=-.171$, $p<.001$) though not for males. This supports a resonance effect where heavy viewers from different social groups diverge in terms of mastery over time.

Figure 34. Longitudinal Mastery Trajectories by TV viewing and Gender.



Educational attainment

Interestingly, among young adults educational attainment has a positive association with mastery. But in the sub-group analysis, those with more education report higher cultivation of powerlessness coefficients (see Table 19). At first sight this might suggest a mainstreaming effect. A more nuanced look however suggests a three-way interaction at work among television viewing, education, and gender.

For males, their own educational achievement becomes the most central factor in explaining gains in mastery by 2004. But this is not the case for females. Previous mastery, health status, ethnicity, and television consumption have more explanatory power than academic progress. This does not mean that females get less education than males. Females report significantly more years (11.9) of education than males (11.6) by 2004 ($F=10.407$, $p=.001$). But females seem to get less mastery ($\beta= .095$, $p=.086$) out of

their educational achievements than males ($\beta = .196, p < .001$). Thus the retardation effect discussed above is clearly at work among females of this sample.

The fact that education seems of such little importance for females' mastery is evidence of a dominant cultural narrative in which females are not expected to be in control of their lives via professional development and job-related satisfactions, and instead their mastery remains based on more basic, external and physically oriented traits.

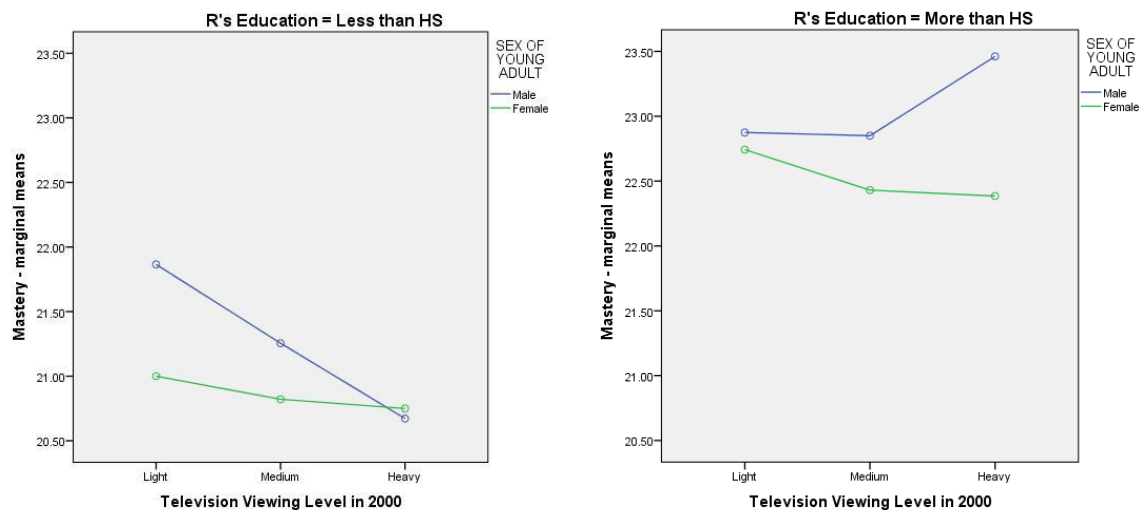
The main finding from these results is that television viewing has a remarkable negative contribution to females' control beliefs, though males do not seem to be equally affected by television viewing. This pattern suggests resonance as a better explanation: two social groups, males and females, disparate in terms of social power, become even more distant in their perceptions of control when they share a heavy amount of television viewing, particularly because females seem to learn from television to evaluate their life in more conservative terms (Figure 35).

Observe that the mastery levels of males and females with high educational attainment diverge significantly ($F = 3.13, p = .076$) among heavy viewers. This is consistent with the resonance pattern: the socially disempowered group (females) learns from television to feel even more disempowered, regardless of having tools to feel empowered (education). The socially empowered group (males) learn from television that their educational skills will allow them more control. Heavy viewing males do not evidence a negative cultivation effect. It could be argued that television

contents emphasize the mastery of professional males and ignores the contributions of professional females to society, and those patterns are reflected in mastery perceptions.

Observe how the graphs below evidence an opposite pattern of association: males with low education converge with females in the lowest level of mastery when heavy viewers, while males with more than high school education diverge from females when heavy viewers. The suggested interactions are not statistically significant. But the interesting finding is that more education does not insulate females from the negative effect of increased television viewing on mastery.

Figure 35. Mastery 2004 by TV viewing 2000, compared by education and gender.

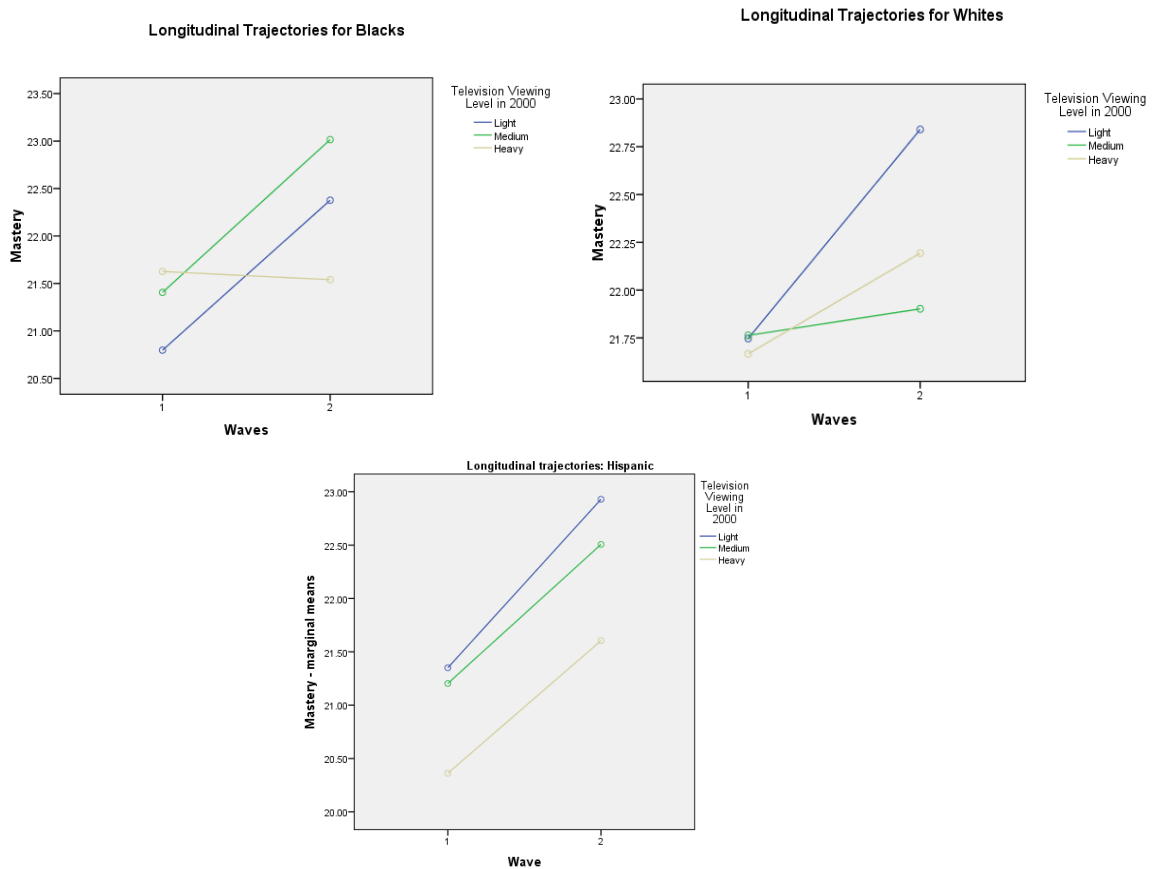


Ethnicity

Coefficients by ethnicity show whites ($\beta = -.043$, $p > .10$) more resistant to cultivation than blacks ($\beta = -.144$, $p < .05$) and Hispanics ($\beta = -.137$, $p < .10$). In the graphs of

longitudinal trajectories (Graphs 36), black heavy viewers evidence the retardation effect from television.

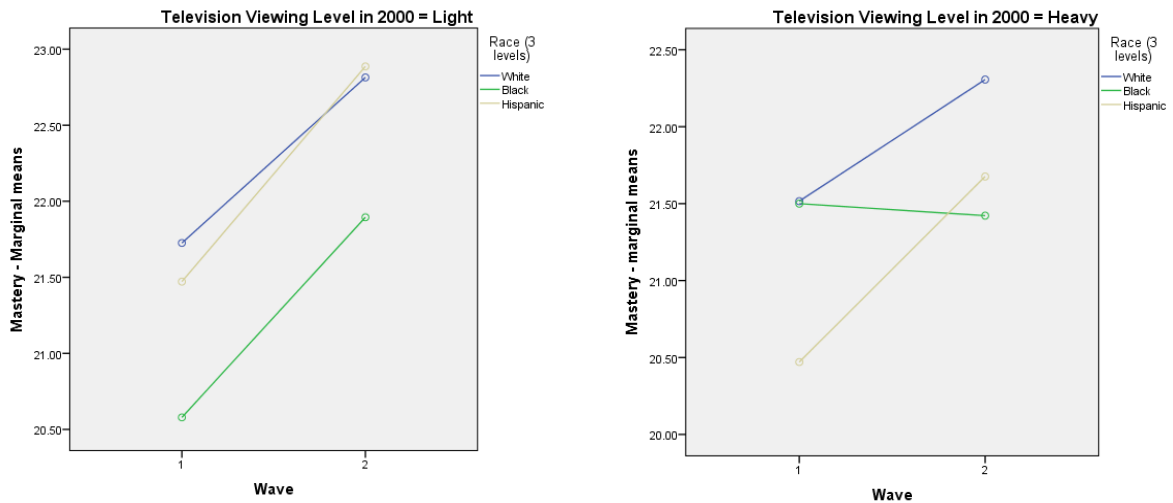
Figure 36. Longitudinal mastery trajectories, compared by TV viewing and Ethnicity.



The growth slope for heavy viewers is practically null, while light and medium viewers have significant mastery gains. The graph for whites shows heavy viewers lagging in gains, while light and medium viewers have more pronounced mastery gains. Hispanics show a different pattern: heavy viewers have a significantly lower mastery baseline in 2000, but their gains by 2004 are similar to those of light viewers. All the

same, four years later heavy viewers are the big losers of the mastery race across all ethnicities. The retardation effect is at work for all ethnicities in varying degrees, though black heavy viewers show the most pronounced retardation pattern.

Figure 37. Longitudinal Mastery Trajectories by TV viewing in 2000, compared by Ethnicity.



Observe that while light viewers of all ethnicities (Figure 37) show similar growth curves, the patterns for heavy viewers diverge across groups. Specifically, white and black heavy viewers show a clear resonance effect by 2004. Blacks' regression coefficients evidence the symptoms of retardation effect: for Blacks, mastery 2004 is a factor of mother's education ($\beta=.121$, $p=.081$) as much as of respondent's education ($\beta=.124$, $p=.081$), and the most important factor is health status 2004 ($\beta=.237$, $p=.001$), followed by TV viewing ($\beta=-.144$, $p<.05$).

On the other hand, Whites' mastery is reliant on personal education ($\beta=.109$, $p=.07$) and health status 2004 ($\beta=.165$, $p=.004$), and not anymore on mother's education

($\beta=.121$, $p=.081$) or TV viewing ($\beta=-.043$, $p=.437$). Hispanics' 2004 mastery is basically reliant on personal education ($\beta=.283$, $p=.001$), and TV viewing has only a marginal negative contribution ($\beta=-.137$, $p=.08$). Figure 37 (above) describes the pattern of retardation among Black respondents. For light viewers (figure on the left, all ethnicities show similar growth curves, though starting at different baselines. But among heavy viewers, only Black viewers report a stagnation of mastery. While both White and Hispanic heavy viewers were showing some growth in mastery by wave 2.

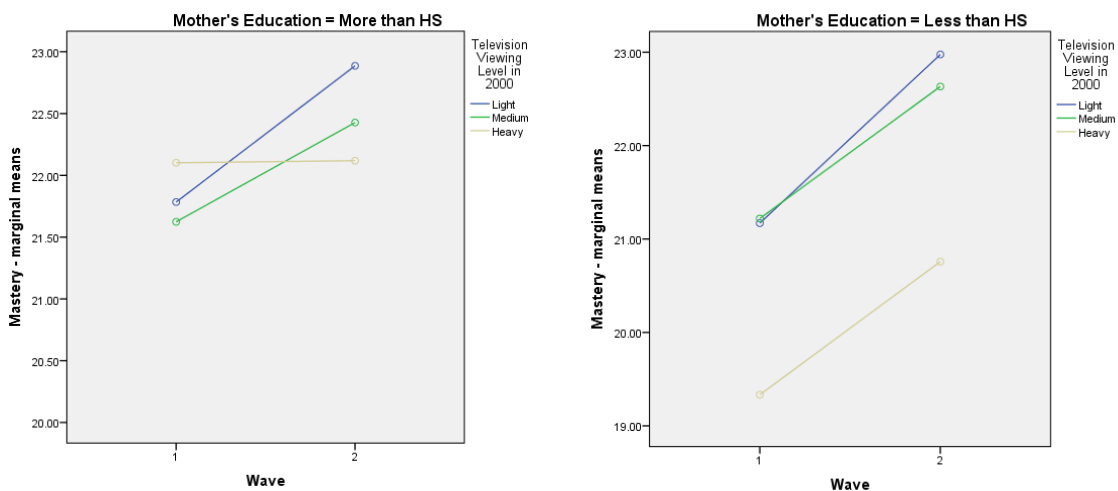
Mother's Education

Mother's education, as an indicator of socioeconomic status, describes how the mastery 2000 baselines diverge according to privilege. Children of better educated mothers have a higher baseline in 2000 than those from less educated mothers. By 2004, mother's education loses relevance, and is substituted by respondent's own educational achievements for most sub-groups. However, the interaction with television viewing at an early age seems to establish the retardation effect for the children of better educated mothers (Figure 38a). These privileged children keep drawing mastery from their socioeconomic status instead of shifting to personal education ($\beta=.102$, $p=.109$), and their growth curve looks almost flat (Figure 38a)

Conversely, the children of less educated mothers who are heavy viewers at fifteen begin from the lowest baseline (Figure 38b), and though they tend to form mastery beliefs increasingly from personal education ($\beta=.214$, $p<.01$), television viewing

remains a clear negative factor of mastery for them into early adulthood ($\beta=-.205$, $p=.01$). Maybe the most striking evidence of the retardation effect among these kids is that health status 2000 remains one of the top factors ($\beta=.215$, $p=.009$) of mastery in 2004. Literally, their body concerns during their teenage years keep haunting them into adulthood.

Figure 38. Longitudinal Mastery Trajectories by TV Viewing, compared by Mother's Education.

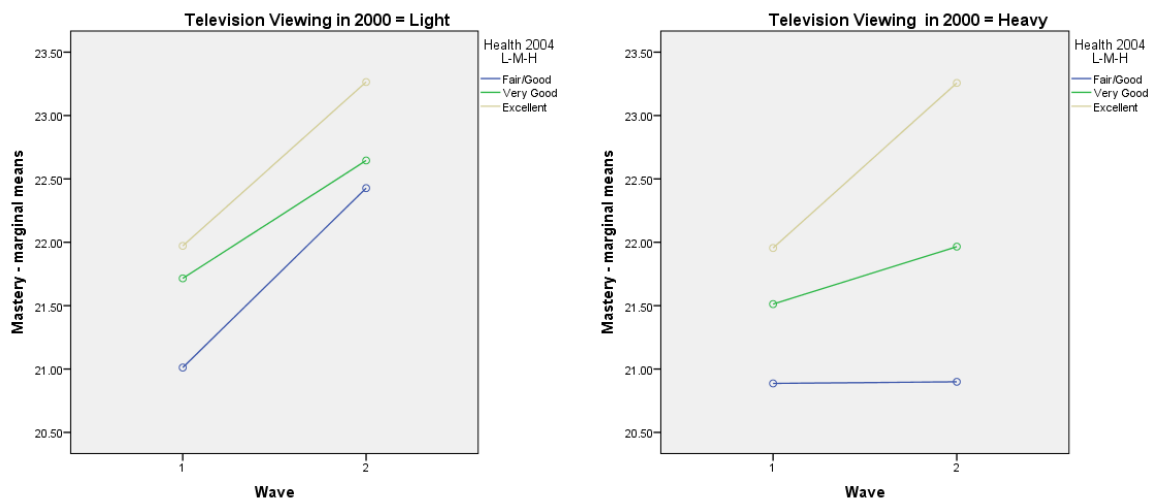


Health status

Health status 2004 has the only significant interaction with television viewing 2000. The longitudinal trajectories (Figure 39) evidence the cultivation of powerlessness by television. Empirically, health status will have a significant impact on estimations of mastery. If people feel less than excellent, their performance in almost any dimension of life is bound to suffer. The mastery trajectories for light viewers show this main effect of health consistently across waves, but even those with lowest health status seem to gain mastery at a similar rate to those with excellent health.

On the other hand, heavy viewers show a marked resonance effect. Those who report low health status in 2004 have remained stagnant at their mastery level of wave 1, and those with excellent health will thrive regardless of their heavy viewing. The pattern suggests that medium and heavy viewing adolescents exaggerate the importance of health status on Mastery. Longitudinally, health status from 2000 has no significant effect on mastery 2004, and television from 2000 does not predict health 2004 either ($\beta=.002$, $p=.963$), but those heavy viewers from 2000 who feel less than excellent health in 2004 evidence a significant loss of concurrent mastery.

Figure 39. Longitudinal Mastery Trajectories by TV viewing 2000, compared by Health Status 2004.



The retardation effect is most obvious here than in any other factor. Heavy viewers manifest a worldview in which less than perfect health becomes an exaggerated obstacle for achieving control in life. As they keep growing, this emphasis on external limitations is bound to prevent them from developing a much needed sense of mastery in the adult world of work and relationships.

Summary of findings

Results at the cross-sectional level provide partial support for the cultivation of powerlessness hypothesis (H1). The statistical analyses for the first wave (2000) does not support a general negative association between television and mastery. Actually there seem to be mild positive contributions of television viewing to adolescents' perceptions of control, though this is not statistically supported. The patterns observed for the second wave (collected in 2004) provide partial overall support for the first hypothesis. In the overall analysis, there is a partially significant negative association between heavy television viewing and mastery.

The longitudinal analysis confirms an independent statistically significant negative contribution of television viewing to perceptions of control overall. This is the single most important finding of this study and provides clear support for the cultivation of powerlessness hypothesis. Interestingly, the longitudinal association (TV 2000 → Mastery 2004) is stronger than the cross-sectional associations. This inconsistency can be interpreted as supporting the claim of cultivation as a long-term television effect. Adolescents in general reduced their television consumption by 2004, but the effects of previous viewing linger into their adult years. As with many other abuses of the human body like smoking and drinking alcohol, the consequences are not evident until years later.

The reverse-causality hypothesis predicted that mastery would determine television viewing longitudinally and that such association would support previous theoretical criticisms to cultivation theory which employed measures of perceived

control as fixed personality attributes that predicted amount of viewing. This reverse-causality hypothesis was not supported by the data. Results showed no effect from previous mastery on later television viewing, neither for the overall analysis nor for any sub-group.

Thus since hypothesis 1 is supported, and hypothesis 2 is rejected, then the proposed model based on cultivation theory is supported. The observed association between television viewing and mastery was further tested applying additional demographic controls, and it was supported beyond suspicion of spuriousness.

The sub-group analysis shows that television's cultivation effect is not equal for everybody, but some social groups tend to incorporate television's narrative in more damaging ways to their personal experience. In this sample, the most often disempowered groups in society—females, minorities, and those with low health status—evidence stronger cultivation of powerlessness than the privileged groups.

In general the data support the cultivation of powerlessness at work through a mechanism of retardation of the maturation processes. This retardation has been observed before in cultivation studies (Morgan and Shanahan, 1995; Shanahan, 1998). Heavy-viewing young adults evidence a slower rate of shift towards adult worldviews. Though this is present across the board, it appears more deleterious for the socially powerless.

CHAPTER 7

DISCUSSION

This dissertation's aim was to test cultivation theory's basic assumption of television's functioning as an agent of social control, constructing and dispensing symbolic power in society, harvesting benefits and stability for the status quo. Overall, it can be concluded that television's fictional world and entertainment allure is still remarkably powerful in defining the markers of status and the specific avenues of social power and their availability to the American young adult.

This study was limited to looking into the empirical association between television viewing and mastery among a sample of adolescents during their transition into adulthood. Mastery, among other similar indicators of perceived control, has been found to be a key element of the human coping system.

Theoretically, sociologists have tried to outline the causal paths from objective social conditions of life to beliefs of powerlessness, and eventually, to the profoundly damaging emotional outcomes of psychological distress or depression (Mirowsky & Ross, 2003; Pearlin, 1981, 1989). Building on these sociological frameworks, the current study has offered a nuanced interpretation of the role of television viewing as a powerful agent of social classification and interpretation. Cultivation theory has defined television as a narrative force that constructs reality and cultivates cultural definitions and expectations about life. Thus the main argument of this work thrusts television into

this theoretical framework as one of the meaning-making links between objective conditions of life and perceptions of powerlessness.

In current western culture, devoid of unifying cultural institutions responsible for producing and reinforcing common narratives, television and the entertainment media have centralized storytelling production and distribution. In Gerbner's words, "television [is] the common storyteller of our age" (Gerbner, et al., 2002, p. 44). In today's media world, though over-the-air and cable television as we knew it in the twentieth century seems in decline, the media diet of most American consumers is still dominated by behemoth corporations that centralize production of storytelling. Television as a social institution will not be dead as long as consumers are still demanding their storytelling as a consumer product, with television production values and narratives. The validity of these findings should not be assessed in terms of the strict associations to viewing hours. People might be spending less time in front of a television set, but they are certainly watching more and more professionally made storytelling at all times, in all places.

Cultivation is not a theory about television. Cultivation is a theory about the role of centralized and market oriented storytelling. This might be one of the last cultivation studies to take television measures exclusively as an independent variable. We will need to work more precise indicators that capture people's consumption of commercially produced storytelling.

This study has sought to measure the contribution that television as a socializing agent makes at the pivotal time of transition between adolescence and adulthood.

Cultivation affirms that the more time viewers spend in the distorted world of television narrative, the more likely they are to adopt standards, categories, and expectations consistent with that symbolic environment. We have found moreover that these viewers apply the same standards when they judge their own ability to solve important problems in their lives.

The findings confirm the fundamental meaning-making role of television viewing in the life of American adolescents. In essence, we can speculate that television has been cultivating a common interpretation of what it means to have control over one's life. Following George's (2003) affirmation of perceived control as a worldview that circulates in the dominant culture, the findings from this study suggest that when individuals from different social groups draw heavily on television's representation of control, this representation is a significant causal factor in the development of a sense of powerlessness among those who already belong to socially disempowered categories.

The first and main hypothesis of this study states that heavy exposure to television's contents will have a negative effect on mastery scores. The findings from the longitudinal analysis support the cultivation of powerlessness hypothesis. Television viewing in 2000, when the respondents in our sample were adolescents, was found to have an overall statistically significant contribution to mastery beliefs in 2004, when they were young adults, even when introducing six control factors and controlling for previous mastery in the equation.

This general finding is similar to the results of Lee and Niederdeppe (2011). They analyzed longitudinal data from a one-year follow-up panel survey on television consumption and fatalistic beliefs about cancer prevention, and found previous television viewing was significantly associated with holding fatalistic beliefs about cancer prevention, even after controlling for previous fatalistic beliefs and six demographic controls. In Lee and Niederdeppe's (2011) study, the standardized regression coefficients for overall television viewing ($\beta = .10, p < .05$) and for local TV news ($\beta = .13, p < .001$) are analogous to the coefficients reported in this study for overall television viewing on mastery. Also, akin to the present study, Lee and Niederdeppe failed to support the reverse causality hypothesis, which stated that previous fatalistic beliefs about cancer prevention explained later television viewing. Interestingly, they found that overall television viewing had almost the same effect size as the amount of viewing of local news. According to their premises, local TV news content was the main source of distorted representations of cancer risks, prevention, and treatment. Their results show that overall viewing and genre-specific viewing (i.e., National TV News and Local TV News) had independent effects on the development of fatalistic beliefs about cancer prevention. Their conclusion about the effects of overall viewing is relevant to contextualize the importance of the present study:

The 'subtle commonalities underlying superficially different program types' (Morgan & Shanahan, 1997, p. 6) may convey a meta-message that is greater than the sum of its parts. If overall TV cultivation effects occur primarily through TV's 'more broad-based ideological' functions like maintaining the status quo or raising fears that can be soothed only by the purchase of advertised goods (Morgan & Shanahan, 1997, p. 7), such an effect would not be adequately captured by separately examining the effects of specific channels and genres. For instance, Kubey and Csikszentmihalyi (2002) have argued that watching TV in

itself leads people to be passive and less alert by inducing a lethargic state regardless of types of content exposed. Similarly, it may be that overall TV viewing cultivates a state that is characterized by a sense of low control over one's life. Fatalistic beliefs about cancer prevention may simply represent a topic-specific manifestation of a sense of low control. Future research might explore this type of mediation hypothesis using social psychological measures like Pearlin and Schooler's (1978) mastery scale, which taps the extent to which one feels efficacious in dealing with his or her problems of life. (Lee & Niederdeppe, 2011, p. 747)

This conclusion points straight in the direction of the present study. We set out to test a very similar hypothesis, that the amount of time devoted to television viewing contributes negatively to the sense of mastery. Lee and Niederdeppe's conclusion however points also to a further question, namely, How is it that this cultivation effect happens? How does television viewing contribute to the construction of expectations of control?

Cultivation theory is based on the assumption that the narrative content, the repetitive patterns of representation of characters, conflicts, and resolutions tend to reinforce social structures, cultural understandings, and behavioral expectations. Asking which television contents might be responsible for the cultivation of powerlessness is beyond the scope of this study, but the question is worth considering. Further research should look into the way television storytelling constructs a generalized narrative about problem solving and personal agency, and probably identify how some specific contents and structures might cultivate the different dimensions within the construct of control (e.g., instrumentalism, powerlessness, fatalism, and the role of luck, chance, or powerful others; see Levenson, 1973) or self-efficacy beliefs related to specific behaviors.

Lee and Niederdeppe's reference to Kubey and Csikszentmihalyi's monograph (2002) suggests the intuition that, beyond the effect from TV content, the experience of routinely spending a number of hours in front of the television might also contribute to the diminishment of mastery. An analogy about television viewing and being overweight might be useful to describe the assumed system. The association of television viewing and obesity is multi-factorial (Salmon, Bauman, Crawford, Timperio, & Owen, 2000). Heavy viewers 1) are exposed to more advertisements about unhealthy food and snacks, 2) tend to eat more unhealthy snacks (e.g., popcorn, candy, chocolate, and soda) per hour of watching TV, and 3) tend to be less physically active and have a more sedentary life. All three factors contribute independently to being overweight, but the interactions among the factors have a stronger effect than any of them individually. Similarly, heavy viewers tend to 1) watch more disempowering information, stories, models, and coping patterns (cultivation theory), 2) experience the reinforcement of powerlessness through "appetitive helplessness" (Peterson, Maier & Seligman, 1993), which posits the possibility of learned helplessness through non-contingent success (that is, people receive a pleasurable stimulus from television without doing anything but sit there watching what comes out, which over time creates motivational deficits due to the non-contingency over the pleasurable outcomes (Hearn, 1991), and 3) television viewing displaces other mastery-enhancing activities like studying, working, or venturing into challenging and satisfying social, physical, or intellectual activities. Thus it is suggested here, based on this systemic intuition, that cultivation research should expand its scope to explore the charting of a general narrative about control in

television's storytelling within a framework that considers how viewing interacts with control beliefs and behaviors to produce control expectations and their further manifestation in the form of stress.

The second hypothesis tested for reverse-causality, suggesting television viewing in 2004 was caused by mastery beliefs from 2000, that is, that feelings of low mastery lead to greater viewing as a default activity—a notion that a priori seems highly plausible. This hypothesis however was rejected. In the longitudinal analysis there were no significant associations between mastery in 2000 and television viewing in 2004, not for any sub-group, with or without controls. Rejecting this hypothesis implies that for the current data, a reciprocal causation model cannot be supported either. This hypothesis was introduced to test Wober's criticism of spuriousness to cultivation theory (1980, 1982), based on the assumption that perceived control is a fixed personality trait causing both attitudes and behaviors associated with the cultivation hypothesis, namely, fear of victimization and television viewing. The current study argued theoretically that perceived control should be considered a relatively flexible belief, open to influence and modification from the symbolic environment dominated by television and television-like content. The empirical tests rejected the reverse causality hypothesis (H2), and confirmed the cultivation of powerlessness hypothesis (H1), beyond any suspicion of spuriousness, since the statistical association between mastery and television viewing did not disappear under stringent statistical controls in the longitudinal analysis.

Though the reverse-causality hypothesis was rejected, it is important to contextualize what this means. The data for this study provides an opportunity to test the hypothetical associations between television viewing and mastery during a time of transition in which adolescents are developing their sense of control over life outcomes. Research has regularly found that mastery tends to crystalize around the early or mid twenties (Lewis, et al., 1999; Mirowsky & Ross, 2003). It is very likely that over the next few years, our respondents' mastery levels will stabilize and their viewing habits might change. Though we cannot establish a reverse-causality association from the current data, we cannot rule out the possibility of perceived control causing changes in television viewing at some point in life. Such a scenario in which television viewing and perceived control had mutually reinforcing associations would be theoretically consistent with cultivation research. Since people are not viewing in a symbolic vacuum, but previous viewing becomes part of the individual's culture and life outlook, in time it would be expected that people who bought into the cultural mainstream would seek reinforcing information. Further research into the cultivation of powerlessness should be conducted with older populations, applying longitudinal methodologies with shorter and longer lag times.

This study has introduced the life course approach to cultivation theory suggesting that at different stages in the life course, cultivation effects could be different depending on how membership to specific social sub-groups interact with demands and expectations associated with the current stage in the life course.

Specifically, this study has looked into how American adolescents evidence the consequences of living with television during the transition to adulthood.

The life course approach suggests that at different times television will have different effects depending not only on the intentions (or applications) of the user, but on the position in the life span that the viewer is going through. At adolescence, viewers are receiving messages constructed and directed at them, for example, pop music, music videos, teen soaps and sit-coms, adventure movies, scary movies, and so on. But they are also getting a good deal of messages designed for adults, which are available concurrently with teen content. What is the general message they distill from television about what it is like to be an adult? It seems that adolescents learn from television that the real adult world is rather simple. Female adolescents seem to understand that the adult system is something they can understand and learn to control. This is speculated from observing females' relatively higher levels of mastery associated with heavy television viewing at mid-adolescence.

By the time they reach adulthood four years later and face the reality of higher education, employment, romantic relationships, childrearing, and housekeeping, those same heavy-viewing females evidence the lowest levels of control in the sample. It is as if they are stunned by reality, as if television had prevented them from preparing for facing frustration as they go into adulthood. Curiously, heavy viewers from 2000 are also less likely to be employed in 2004, and if they are employed they report low levels of job satisfaction. This speculation is based on the observed patterns at both waves, and leads

back to the multi-dimensional association between the experience of television viewing and mastery that was discussed above.

The analysis has found evidence of a retardation effect from television viewing among heavy viewers. Patterns that show heavy viewers lagging in their mastery gains across time are explained by their excessive reliance on external signs of control (gender, ethnicity, socioeconomic status, health) rather than on internal resources (education) that are sought and valued by the adult world. Consistent with the life course approach, people who are not ready or willing to meet the expectations and demands inherent in the appropriate roles of their life stage might experience a loss in their mastery beliefs. Heavy viewers evidenced lower contributions from their internal and external resources on their 2004 mastery.

This study offers a longitudinal test of cultivation theory that meets all four criteria for establishing causality: time order, correlation, non-spuriousness, and theoretically based associations. Results from the longitudinal test of cultivation effects have found that previous television viewing (reported in 2000) has a statistically significant effect on later mastery beliefs (reported in 2004). The relationship is still significant after six statistical controls are introduced into the equation, and even after controlling for previous mastery. This means that longitudinally we are not only testing mastery 2004, but the change in mastery between 2000 and 2004 and their association to television viewing, and we can conclude that mastery changes during adolescence are found highly susceptible to the influence of the symbolic world of television.

The direction of the association is negative, which is consistent with the basic assumption of cultivation theory about television as an agent of social control and power distribution. This kind of longitudinal finding strengthens the claim of cultivation theory to be a paradigmatic theory of media effects, still charting the mainstream at the beginning of the twenty-first century, in the context of the internet, online media distribution, and smart phones.

Another advantage of longitudinal cultivation studies such as this one is that often lagged cultivation effects are stronger than concurrent effects. Morgan (1982) found longitudinal associations between television viewing and subsequent sexism scores to be stronger than concurrent ones. This is similar to the results of this study, where mastery scores were more affected by television viewing from four years before than by the concurrent level of viewing. This pattern underscores the value of longitudinal analysis, since it can lead to very different conclusions than might be reached from cross-sectional data exclusively. Television seems to produce a cumulative effect over time that reflects on subsequent mastery, especially evident at a time in which respondents are transitioning into adulthood. The cultivation effect is shown to be dependent on the divergence in interpretations that heavy viewers make of the sources of mastery as they grow up and face new challenges.

Further research with the National Survey of Youth, which has repeatedly interviewed the mothers of the adolescents in the current sample since they were adolescents themselves, and has a wealth of accumulated data on academic performance, work, and other socio-demographic and cognitive traits, will contribute

greatly to a fuller understanding of the interactions between television viewing and social identities on expectations of control, since the same measures employed in this study were repeatedly measured with the same sample in 2008 and 2012.

Further analyses by sub-groups confirm resonance patterns often found in cultivation research. In general, membership in socially disempowered groups is associated with stronger cultivation effect. Females, ethnic minorities, the poor, and the poorly educated are objectively deprived of social power, and also these groups have historically been misrepresented in the television world (Signorielli & Bacue, 1999; Signorielli, 1989; Signorielli & Kahlenberg, 2001). When these relatively powerless groups expose themselves to heavy doses of television, they tend to agree with the dominant point of view and see themselves as personally less powerful, often ignoring in practice the tremendous potential of their personal resources, such as education. They are already disempowered in the current social structure, but when their social identity interacts with television's narrative where they have been portrayed as less powerful (due to patterns of representation, casting, victimization), they tend to reflect a larger deficit of perceived social power than their light-viewing equals. This pattern has been termed resonance by Gerbner and his colleagues (1980), who said, "The congruence of the television world and real-life circumstances may 'resonate' and lead to markedly amplified cultivation patterns" (p. 15).

Results show that for females, previous television viewing has a very strong negative effect on later mastery, compared to other sociological factors like education and previous mastery. Females do not differ from males in patterns or amount of

viewing, but their incorporation of television's lessons about control appears to be very deleterious to their sense of personal mastery. One token of this imbalance is that of education. Sociological research has found education as the most important factor for mastery. For heavy-viewing females in this sample, education does not contribute significantly to their mastery perceptions.

When compared by ethnicity, most minorities (that is, black and Hispanic) exhibit statistically significant cultivation of powerlessness. Among whites, TV viewing is not associated with perceived control, though the growth slopes for white medium and heavy viewers are certainly lower than for light viewers. For Hispanics average mastery is lowest for heavy viewers at both waves. The growth trajectory of Hispanics from wave 1 to wave 2 has a similar slope to light and medium viewers but lands the average mastery of heavy viewers in wave 2 at the same level as light and medium viewers were in wave 1. For blacks, average mastery at wave 1 was marginally higher for heavy viewers than for light and medium viewers, but the longitudinal growth slope for heavy viewers is practically flat. For black heavy viewers there is practically no increase in mastery from wave 1 to wave 2, and by 2004 they show the lowest mastery average of all three ethnic groups. Thus statistically, minorities evidence a stronger effect from television viewing, but all heavy viewers (including whites) evidence cultivation of powerlessness that is reflected in flatter growth slopes longitudinally. These patterns can be interpreted as a retardation effect from television viewing (Morgan & Shanahan, 1995; Shanahan, 1998), that is, television's messages seem to prevent adolescent viewers from acquiring a healthy level of mastery, which is the natural outcome of the

human maturation process in American society. When adolescents spend large amounts of time watching television their cognitive and emotional development seems to be thwarted. In this case, it is evidenced from the lower increases in perceived control they report as young adults. Whether or not this sub-development is eventually compensated for by personal experience cannot be established from the current data. It certainly is a research question which fits with a life course approach to cultivation theory and research.

A similar retardation effect has been reported in a series of studies on the cultivation of authoritarianism among adolescents (Shanahan, 1995; Morgan & Shanahan, 1995; Shanahan, 1998). Shanahan (1998) found that, "as respondents aged, heavy viewing seemed to reinforce their authoritarian notions, while light viewers were gaining more experience in other areas that lead to better understanding of democratic values and perceptions" (p. 495). Shanahan's explanatory logic clearly applies to the results observed in this study. The phenomenon described in his work is analogous to the findings of this study. Most early adolescents tend to be authoritarian and external in their perceptions of control. These two attitudes go hand in hand and probably have a common cognitive origin. Both stem from perceptions of uncertainty, anxiety about the future, an exaggerated fear of victimization and in general a strong sense (based on objective conditions) that life outcomes are mostly controlled by other powerful people. Adolescents are usually under the control of their parents, teachers, and authorities in general. From a position of vulnerability, it can be expected that people will look for

some powerful agent to side with them and prevent any harm by imposing authority and respecting tradition.

Shanahan's findings fit a clear mainstreaming pattern: adolescents from higher socioeconomic status who should be getting less authoritarian due to access to better education, democratic opportunities, and personal freedoms, did not change their authoritarian attitudes if they were heavy viewers. On the other hand, adolescents from lower socioeconomic status, due to their social context (more than TV), stayed more authoritarian, even as light viewers.

The pattern from this study's data fit the resonance pattern instead. Adolescents are expected to grow into adulthood and switch the source of their control from parental protection and physical ability toward more intellectual and skill-based mastery. Light viewers from all sub-groups evidenced the augmented contribution of education to mastery by 2004, but heavy viewers failed to profit from education by the same rate.

Results support the generally accepted view that aging and maturity produce increased internal outlooks among adolescents and young adults. The most important contribution of this project is the confirmation that heavy television viewing is associated with the retardation of cognitive development that manifests in lower mastery and with lower reliance on personal achievements like education which tend to be the main sources of personal expectations of control among American adults. Whether this lagging maturation or the general sense of control can be corrected later in life is unknown. But there are some key choices in life that people make as young

adults (e.g., pursuing higher education, marriage, employment, starting a business), and whose effects would probably set in motion a reinforcing cycle of mastery and outcomes that might be hard to break.

Finally, this study has argued in favor of considering perceived control as a cultural indicator. The argument is based on the fact that the foundational writings of cultivation theory clearly positioned the theory as addressing the critical problem of how social power is constructed and distributed (Gerbner, 1977). Some of the cultural indicators that have been employed include media violence, gender-roles, demographic representations, and political ideologies. The conclusion of this study is that cultivation research would greatly benefit from borrowing from the sociological approaches to perceived control and adding measures of personal perceptions of control to its list of cultural indicators of social power.

The general structure of control can be observed in television's content from the patterns of aggression and victimization, or from the repetitive casting of certain profiles for positions of power. This has been done already. But there might be more layers of meaning associated with the narrative structures of television fictional and factual contents. Five out of seven items in the Pearlin Mastery scale deal with problem solving. Apparently being able to imagine a way out of trouble is key to healthy mastery beliefs. Thus if cultivation research incorporates perceived control as a cultural indicator, it is suggested here that cultivation research should also incorporate methodological refinements to deal directly with storytelling. Busselle, Ryabovolova and Wilson (2004) have argued for the introduction of a narrative perspective in cultivation

which recognizes “the story as a location of power and the central communicative unit with which viewers interact” (p. 374). Chesebro (2003) has offered a qualitative content analysis framework that focuses on the narrative structure of conflict resolution and that helps identify the values and structures of power implicit in the story. These perspectives will surely help strengthen cultivation’s relevance as a theory of social control in a world of mediated storytelling.

What’s next?

A subtle but powerful finding from this study comes from the difference in R^2 observed between the regression models for light and heavy viewers. Overall, light viewers reported higher mastery than heavy viewers, and the R^2 for the light viewers’ model was almost half that of heavy viewers. The model for light viewers is evidently less specified, and it needs more factors to account for a greater proportion of mastery’s variance. Apparently light viewers draw mastery from a wealth of varied sources, as opposed to heavy viewers. This difference is evidence of television’s power for cultural homogenization among heavy viewers. The final conclusion of this project speculated that light viewer’s increased mastery could be attributed in part to more varied sources of storytelling. Light viewers’ storytelling is rich, diverse, not stereotyped, discontinuous, heterogeneous and probably placing weight in spiritual or emotional experiences and outcomes that cannot be easily exploited by the commercial media.

What should we do about these findings? This interpretation of the data suggests communication researchers and interested parties should engage in promoting

more storytelling. Not less, but more. More diverse storytelling. More meaningful storytelling. Not as entertainment, not as dogma, but storytelling that is relevant to life, to personal struggles, to transition periods and eventual human transformation.

By “not less,” I suggest that our media education efforts should not be addressed at reducing the fare of media consumption. Also, probably the classic media literacy approach to develop “critical consumers” might be limited in protecting viewers from the cultivation of powerlessness.

My strong intuition as I finish writing this report, fifteen years after starting, is that storytelling is the answer. Media education efforts informed by this project should focus on developing and providing tools for storytelling consumption, storytelling creation and exchange.

Television’s storytelling establishes a narrative of control: Life is mostly represented as the pursuit of control as means for fulfillment, comfort, and relaxation. True heroes in myth and storytelling never strive for control. Control is sometimes an outcome, but not the final goal. Heroes’ highest striving is to reconnect humanity with the divine. But television heroes are mostly concerned about short-term goals of control. A counter narrative cannot be about relinquishing control, but about the emphasis in the long-term, transcendental goals that often escape accurate measurability. True heroes learn to live and thrive out of the dimension of control.

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